ENGINEERING and MINING JOURNAL.

VOL. XXVI., No. 19.

RICHARD P. ROTHWELL, C. E., M. E., } Editors.
ROSSITER W. RAYMOND, Ph. D., }

NOTE.—Communications relative to the editorial management should be addressed to Mr. ROTHWELL, P. O. Box 4404, New York. Articles written by Mr. RAYMOND will be signed thus *

THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
27 Park Place, New York.

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NOTICE.

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GEOLOGY RAMPANT IN COLORADO.

Our esteemed correspondent Mr. CARL WULSTEN, in a letter published by us last week, gave a brief synopsis of his views as to the formation of Silver Cliff district, in Southern Colorado. Now the fact that Mr. WULSTEN has favored us with some interesting and valuable letters, chronicling the progress of the mining industry in that region, will not prevent us from "going for" him on occasions when we think he is wrong; and this is precisely one of those occasions. The account of Silver Cliff, as published in our columns, is itself somewhat startling, as presenting several highly marvelous mineralogical and geological phenomena; but it is too brief to be clear; and we turn, therefore, to the Rosita *Index*, of October 3d, where Mr. WULSTEN's views are set forth at length. The name of this periodical will recall to our readers that specimen of "Hardscrabble literature" which came from Rosita a couple of years ago, and was duly admired by us. Mr. WULSTEN was also the author of that gem. We must say that he took very good-naturedly the "polishing" we then bestowed upon him, and we have no doubt that he will be equally serene now. But, whether or no, the article in the Rosita *Index* is fair game; and under such a temptation we must shoot, as he flies, even our Esteemed Special Correspondent.

The article in the *Index* informs us that in this astonishing locality of Silver Cliff, there is a prodigious, apparently miraculous, "surface depository" of horn-silver; an agatized porphyry belt, at least a mile wide; trap rock in horizontal, shelvy, flaky, and slaty condition, non-mineral-bearing, and forming intermediate dikes between the mineral-bearing agatized quartzite. The latter is of shelly cleavage, carries a manganese ore, and, in the opinion of the writer, "other ores belonging to the group of metalloids, producing platinum, palladium, iridium, and osmium." Rubies, amethysts, and remarkable crystallizations, bordered with obsidian, also characterize this quartzite. Of the manganese ores "specimens are found of large dimensions and in most curious shape, evidently having been produced by a quick and distinct transition from a molten condition to a globule-shaped solid status." The obsidian is full of impressions of moss and vegetable figures, exquisitely pictured, "seemingly photographed" upon its cleavages. None of the shafts sunk in this obsidian have as yet penetrated it; and thus "facts can not bear out theory upon the question, What will be found under this glass?" But theory is quite able to "play it alone" on Mr. WULSTEN's hand; and facts need not "assist." Here is his answer to the question:

"I think granite or country rock, for I believe that the obsidian is the outflow and residue of the geyserous volcanic upheaval which produced this whole dike. Silver must have been produced in crevices and dikes to give the submersion period a chance of leaching out the double chlor-silver, which is found among the cavities and cracks of the surface rock; * * * * for horn-silver can not be produced but from metallic silver and its heated submersion with chlor-natrium in connection with nitric acid, and probably herein in gazoic form. I therefore hold that silver in other form than in this present double chlor condition must be found whenever mining will have penetrated deeper into this dike or belt."

We do not care to ridicule the mere language employed in the article we have quoted. "Gazoic," we suppose, means gaseous, and chlor-natrium is German for sodium chloride, or common salt. But when Mr. WULSTEN calls garnets "rubies," he is pushing his freedom in the use of English too far. "Rubies" is not even the German for garnets. Aside from such minor points, it is plain from his description that he retains the excessively plutonic notions which he impressed upon Hardscrabble literature, two years ago. Numerous clear indications of the action of water, such as the botryoidal forms of manganiferous ores, and the manganiferous efflorescences on rock-cleavages, are unhesitatingly ascribed by him to fusion and its results. We do not now undertake to say exactly what is the formation at Silver Cliff. What little information we have on that point does not warrant us in a detailed description. But this we can say, that if we had no other information than is contained in the article before us, we should conclude from it that the whole volcanic interpretation must be a huge misconception—that the trap was not trap, nor the obsidian obsidian. As for Mr. WULSTEN'S statement that horn-silver can only be formed by the "heated submersion" of metallic silver with salt and gaseous nitric acid, we think a little attention to the common processes of silver metallurgy will lead him to abandon such crude theories. Nor is a "submersion period" necessary to furnish the chlorine required for horn-silver. All stratified rocks contain or have contained salt; and chlorhydric acid is common in volcanic emanations. Even without high temperature, the action of percolating surface waters would account for all the phenomena in explanation of which such stupendous reactions have been conjured up by amateur philosophers. Finally, there is no "double chlor condition" of horn-silver. It is simple argentic chloride, AgCl; and you can't make any thing else out of it.

And now comes Professor J. H. KERR, of Colorado College, Colorado Springs, with "Notes on the Economic Geology of the Upper Arkansas, North Fork," published in the *Western Review*, of Topeka, Kansas. According to the Professor, the carbonates of lead occurring near Leadville have had a curious origin:

"Heat generated by the friction of the tumbling elements and the chemica combinations arising from new associations, made during the anarchy of moun tain building, formed here and there beneath the earth-crust lakes of melted rock Steam rapidly generated by the sudden inflow of water upon this molten mass has at times broken the overlying crust, and forced up and out streams of lava so great that the lava outpours within historic times, in comparison with the ancient, dwindle into nothingness. With these earth-streams came comparatively little mineral. The lead, silver, and gold lying at the bottom of these lakes were not to be moved out by steam pressure alone, but by steam combined with the agitating power of the falling crust. Thus faults are formed, and through them gush the contents of the boiling lakes. No sooner does this mass begin to flow over the surface than the heavier metals begin to come under the control of gravity, and are soon to be found on the solid rock, while the lighter materials continue to flow on. In the Arkansas Valley the top rock at the time of the overflow was either sandstone or lime rock. The sandstone gave way before the fiery mass. The limestone for the most part held its own, and became the bearer, foundation, or shelf of untold wealth. Hence the contact of the lava and the limestone becomes to the practical miner a lookout of more than ordinary interest. The lead, as it comes up through the fault, no doubt existed for the most part as melted galena; but ere it reaches its resting-place beneath the lava, it has parted with its sulphur and wedded itself to the carbonic acid which had just been divorced from the underlying limestone through the agency of lava-heat."

That is not all, but that is enough. Aspiring young authors, who would like to learn how to sling science in this way, will be glad to learn that the art is taught at Colorado College, where there are special courses in mining and metallurgy, for the moderate fee of $25 per annum. The instruction given in these courses must evidently comprise several points which, we say without hesitation, are not explained to the satisfaction of students anywhere else in the world. It is shown, for instance, how limestone holds its own before a fiery mass which causes sandstone to give way. (Probably this is taught only as a phenomenon peculiar to the North Fork of the Upper Arkansas. We can not be too thankful that limestone does not behave in that way on the Lehigh, for instance, where we use it as a flux in blast-furnaces, and expect it not to hold its own by any means.) Then it is to this College that we must look for the demonstration that although the limestone "holds its own," it loses its carbonic acid—this ingredient not being "its own"—and in the cabinet of the college (if anywhere) may be sought the specimens of quicklime, slacked lime, or calcium sulphide which, of course, occur in the Leadville deposits to mark the reactions of melted galena, limestone, and lava-heat described by Prof. KERR. In exhibiting these specimens, the Professor doubtless explains how carbonate of lead is formed at a temperature which does not permit carbonic acid to remain in combination with lime; in short, what is the reason that galena, lime, and siliceous and ferruginous materials when melted together in furnaces or crucibles do not act as they do in the North Fork aforesaid. We must respectfully declare that the "tumbling elements" and the "falling crust" do not wholly meet the case. Neither does the "gush of the contents of the boiling lakes." It requires additional gush from the Pro-

fessor. If he is equal to the emergency, he will become to the scientific public what the limestone that held its own became to the practical miner, "the bearer, foundation, or shelf of untold wealth." And the contact between the Professor and the facts will become to every body "a lookout of more than ordinary interest"—in fact, we should say, such a "contact" would amount to a really thrilling collision. *

NEW PUBLICATIONS.

A GENERAL AND ANALYTICAL INDEX *to the American Cyclopædia*. By Rev. T. J. CONANT, D.D., *assisted by his daughter*, BLANDINA CONANT. New York, D. Appleton & Co. 1878.

Indexes constitute the crying need of modern books; and though the articles, which are alphabetically arranged, might be supposed to need an analytical index less than an ordinary text-book, it is sufficient proof of the contrary to enjoy a few times the luxury of consulting a cyclopædia with an index. One speedily comes to consider the luxury a necessity. How often, in the absence of such a help, have we consulted volume after volume of the old *Americana*, or *Chambers'*, or *Appletons'*, trying at a venture, now this title and now that, in order to collect information to which there was no direct clue! And how often have we concluded such a search, without being certain that we might not have found more, if we had luckily guessed where to look! The APPLETONS have set an example which we hope will be generally followed, in furnishing to the student the means of making his examination of a work of reference both rapid and exhaustive. Dr. CONANT and his accomplished daughter have executed this task in a remarkably thorough, accurate, and judicious manner. One might almost say that unnecessary care had been expended on it, considering the arrangement of the cyclopædia itself, which is, by its very structure, half-indexed already. But this hasty opinion would be erroneous. Half-indexed is not indexed at all. The chief value of indexes is in obviating that dawdling and rummaging over books which constitutes too large a part of what we call "studying." Hence one needs to be absolutely assured that if a subject is not mentioned in the index it is not treated in the book, and that the references in the index comprise all that is said about a given subject in the book. Such an assurance is furnished in the case before us. Whoever owns the *American Cyclopædia* ought to own this additional volume. That the number of such persons is very large, every body is aware, though it may not be generally realized that 60,000 copies, or say $6,000,000 worth of this cyclopædia have been already sold. This astonishing popular verdict only confirms what we have repeatedly said of the usefulness of the work; and we have no doubt that this supplementary volume, enhancing as it does the value of the rest, will increase the sale of all. *

PERSONALS.

Our readers are invited to send us items for this column.

Mr. MOFFAT, of the First National Bank, Denver, spent all summer in London unloading Terrible stock; which he has done for himself and Senator CHAFFEE to the amount of $400,000.

W. S. KEYES, the well-known Mining Engineer of San Francisco, has been called to Columbus and Belleville, Nev., as an expert in a mining case.

Mr. GILL, formerly President of the Moose mine, is said to have been very successful in his Leadville speculations this summer. He is at present in this city.

R. NEILSON CLARK, who gives a clear and rational description of the curious and wonderfully rich Silver Cliff (Colo.) silver deposits, is a careful and competent expert.

The Bullion Club is the name of a new association of influential gentlemen in this city, who hope by mutual interchange of information, etc., to promote an interest in legitimate mining, and to prevent the negotiation of unworthy schemes.

The Miniature Edition of the ENGINEERING AND MINING JOURNAL, which is soon to be issued, is wonderfully popular among business men, who are securing places in its advertising pages and on its magnificent supplement sheets to make known their wares, not only to every one in this country, but abroad, throughout the entire world.

Mr. W. A. SKIDMORE, who has been appointed Superintendent Engineer of the Double Standard mine in Bodie, was for some years the agent for California of the U. S. Commissioner of Mining Statistics. He is a gentleman of intelligence and integrity, and has had much experience in mining matters. We congratulate the company which has employed him, and we trust he will achieve the success he deserves.

H. C. SARGEANT, the proprietor of the Ingersoll Drill patents, is an enterprising and successful business man. His orders for rock-drills, from all parts of the world, exceed the capacity of his works, which are running with full force. Mr. SARGENT has always been a large and persistent advertiser in this journal, and attributes the satisfactory condition of his order-book to that fact and to the excellence of the work he turns out.

The Commissioner of Public Works of the New Zealand government has recently ordered machinery in this country for a number of the machine and carriage shops of the railroads of that country. Messrs. WILLIAM SELLERS & Co., of Philadelphia, are shipping about $25,000 worth of tools, shafting, etc.; Messrs. BABCOCK & WILCOX, of New York, supply motive power, consisting of their patent boilers and engines, to the extent of over $18,000 worth, and Messrs. C. B. ROGERS & Co. are furnishing the wood-working machinery.

An interesting question: If veins and beds invariably increase in width and richness as they go down, as is positively asserted in one hundred and fifty-four prospectuses now before us—and the assertion is indorsed by the church in some cases, and must therefore be true—a very small part of the known veins would, at a moderate depth, fill all the space with solid metal, gold, silver, lead, copper, antimony, iron, etc. Now some one is trying to figure out—and he wants to know, you know—how *all* the veins are to increase steadily in width as they approach the center, and how the gold veins are to increase in richness as they become alloyed with the less valuable metal in the other veins. We give it up—but it must be so, for the 154 prospectuses say it, and no one ever heard of a prospectus fibbing.

Col. JAMES G. FAIR, of the Bonanza firm, has come East with the object of obtaining needed rest from the onerous duties connected with the management of the great Comstock mines. No man can climb to the height Mr. FAIR has attained without exciting much personal enmity, and, in the West particularly, receiving much abuse; but there should be no one who is unwilling to credit him with remarkable ability and sagacity. By his own unaided energy and talent he has raised himself to the position of one of our wealthiest citizens, and, while the accumulation of riches may sometimes appear more or less accidental, this remarkable man has shown wonderful skill in the organization and management of the numerous immense mines of which he was superintendent. Probably few mining enterprises in any part of the world have presented greater engineering difficulties than the deep workings on the Comstock, and though no one individual can claim the sole credit of having devised the means of overcoming these, yet Mr. FAIR certainly deserves the lion's share since he was for many years the superintendent of the most extensive of these mines, and brought their output up to an amount previously unheard of in precious-metal mining. Having solved practically and with success many of the most difficult engineering problems, Mr. FAIR is entitled to rank as a born engineer and a man of remarkable executive and technical skill.

MODERN IDEAS OF CHEMICAL ACTION.*

The lecture delivered by Prof. DEWAR on Monday in last week will be long remembered by those who had the good fortune to secure admittance to the building in which it was delivered. The many novel and delicate experiments exhibited were rendered doubly interesting by the extraordinary proportions to which they were magnified, and rendered visible by the whole audience. The subject of the lecture was "Dissociation, or Modern Ideas of Chemical Action," and the following is an abstract:

New chemistry and old were now so distinct, said Prof. DEWAR, that it was for some years quite customary to refer them, as it were, to two different times, and this had been mainly brought about by the large advances which had recently been made in organic chemistry. His object was to deal with some of the large generalities that had been elaborated through a long process of time, and to show that the advantage of the long experiments, which were apparently of little use at the time, was that in the cumulative result they were of much greater value than sudden and brilliant discoveries. For this purpose he must direct attention for a moment to chemistry at the beginning of the century. BLACK died in 1799, and they justly regarded him as the father of modern chemistry. He was so rigid a teacher that, though he started the new chemistry with LAVOISIER in his last days, he still strongly objected during thirty years of his professional career to regard any doctrine of chemistry as final at his time, and the consequence was distinctly stated that he never called his lectures lectures on chemistry, but lectures on the action of heat and matter. It had been a matter of very great difficulty to chemists to understand how at that period BLACK managed to lay so firm and secure a basis in such a difficult department of science. The great discovery of BLACK was the production or origin of fixed air, associated with the transformation of bodies where they were liquefied or became gaseous—the great doctrine of latent heat—that a body in passing from a solid into a liquid took in heat which was not measurable by the thermometer. At the beginning of the century it was distinctly regarded as proved that air was really a substance that differed from the fluid in some way or other, having stored into it a certain quantity of heat. In a few years they found DALTON commencing to say, and stating distinctly in 1805, that he had no doubt that the permanent gases were liquefiable bodies. He said at the time that the experiments of BLACK and others had so far proved the results that there could scarcely be entertained any doubt respecting the reducibility of elastic fluids of whatever kind into liquids, and that we ought not to despair of effecting it by the use of low temperatures and strong pressures exerted on unmixed gases. Now, in order to illustrate what DALTON really did, he (Prof. DEWAR) would begin by proving that all liquids in a gaseous state had a certain amount of vapor, and that the vapor exerted a certain pressure, which was measurable. He had on the table three ordinary barometers, and into two of these he would introduce two fluids,

* A paper read before the British Association for the Advancement of Science. From the *English Mechanic*, Aug. 30th, 1878.

leaving the third as a standard. Into the first he would introduce at the top a little alcohol, and into the little cup at the top of the second some ether. They would observe that the alcohol floated about on the surface of the mercury, and that the mercury was being depressed—that depression being produced by the vapor of the fluid. Different fluids had different amounts of pressure. Ether had an enormous pressure, and it would be observed that it forced the mercurial level down much lower than the alcohol did. DALTON'S investigation as to the pressure of vapors could only be regarded as second to his great discovery of the atomic theory; for it directed the attention of investigators to the laws relating to the pressure of vapor and temperature. Now, in order to show better what he had been explaining he would magnify through a lens fixed air—carbonic acid, discovered by BLACK, and then subject it to pressure. As the pressure was put on, the manometer hand rose, and they would see the liquid carbonic acid appear as a clear liquid on the surface of the mercury. This carbonic acid was as permanent as water, provided it was at the required pressure, which was something more than 60 atmospheres. The pressure would fall as he reduced the temperature, and by compressing it again it would rise again temporarily. He would show them that this liquid could be made to boil. The appearance of this liquid carbonic acid was, as illustrated, entirely altered by altering the temperature. This was typical of all fluids, and indeed of all solids. He also showed how the fluid could be made to disappear by increasing the temperature, notwithstanding that he increased the pressure ever so much. Even if he subjected it to the pressure of 100 atmospheres, the liquid would not appear. Arranging a current of vapor to gradually heat the glass, in a short time they would see the fluid gradually disappear, although he kept increasing the pressure to keep up the volume. This had been most elaborately worked out by one of the greatest discoverers of the time—by Dr. ANDREWS, of Belfast—namely, what he called the "critical point"—and he was only sorry that Dr. ANDREWS was not present to see magnified, and on so large a scale, an experiment which he had often shown him on a smaller one. At 80° this fluid optically disappeared, and no amount of pressure would at that temperature bring it back. But by cooling it again they would get back the liquid, though there was then no liquid there, apparently. This was exactly parallel to what went on with a large number of gases. The effect of pressure in modifying chemical bodies dates from the beginning of the century, being observed very shortly after the time of BLACK. In fact, BLACK had a very favorite pupil in HUTTON, the great geologist. At that time it was a source of great discussion among geologists and physicists how far water or fire played the greater part in the actions that had taken place in the past. One school argued that water had done every thing; the other that fire did every thing. HUTTON supported the doctrine that fire modified the character of the stratified rocks, and he answered the objections raised to the stability of certain chemical bodies by proposing the theory that pressure under the ocean produced a modifying influence on chemical changes. His disciples were taught this, but never attempted any experimental verification, with the exception of Sir JAMES HALL, who made a very interesting experiment about 1798, on the character of basalt when fused. He showed that if they fused basalt, it could be reproduced, provided sufficient time was given for it to cool. After HUTTON'S death, Sir JAMES HALL made an elaborate series of experiments to prove that HUTTON'S theory was right. The substance he took was carbonate of lime. How was it that in an ordinary limekiln caustic lime was obtained and carbonate of lime did not exist? How was it that carbonate of lime was obtained at all if fire had acted, as was said, in geologic states? HALL tried to prove that stability depended upon pressure, and succeeded in producing chalks and actual marble by confining the marble or chalk in an enormous tube of great length, heating it to a high temperature, and preventing the escape of any thing; so that chalk, or a species of marble, was formed by heating carbonate of lime. Fifty or a hundred atmospheres were sufficient to produce a chalk of very little weight, and, therefore, large deposits of lime could be had without its being necessarily caustic. About 500 such experiments had been greatly lost sight of. Little had been done, and a repetition of this experiment in a different form was one made within the last twelve or fifteen years. The principle was one which he would illustrate. The lecturer then gave an elaborate chemical illustration of the experiment referred to.

The great development of the effect of pressure in modifying chemical bodies was due to Prof. CLAIR DEVILLE, of Paris, who, for the last twenty years, had rigidly followed the philosophy of BLACK in examining the action of heat on chemical bodies or mixtures of bodies. In other words, he had compared a vapor most rigidly with the behavior of a chemical body; and all the experiments of DEVILLE were really related to a very ingenious experiment of Mr. JUSTICE GROVES, who found that water, although a very stable fluid, was readily decomposed at a white heat by means of red-hot platinum. This struck DEVILLE as an extraordinary experiment. because here they had highly-heated steam giving such a temperature as to decompose water itself, and by experiment he found that all that water required for its decomposition was, that they should have a continuous current of vapor driving away the amount decomposed. This was exactly parallel to the decomposition of chalk. The experiment was then made, and showed that at a temperature very much lower than the fusing-point of platinum, water was decomposed into gases; and that this was so, was shown by reproducing water from the gas by the aid of the electric spark. Another very interesting experiment was made, showing the results of boiling action set up among the crystals of carbonate of potash, as also another experiment with palladium with the same object. Every vapor has a certain curve that represents all its relations—namely, the increase or diminution of pressure to the temperature. If it was true that the behavior of a chemical body was so strictly analogous to that of a vapor, then all the laws of dynamics could be applied to the stability of chemical bodies. This had modified entirely all previous ideas of metallurgical interactions, and it has enabled chemists to ascertain temperatures very much beyond the range of the best thermometers, to consider carefully the case of high temperatures as they occurred in the sun, and to explain a great many abnormal reactions that chemists had never before been able to explain. The temperature in dissociation was that temperature where a body could not exist—that is, it was that temperature in the case of the body of water where no water could exist, where there was no possibility of producing water at that temperature; that was a temperature of something like between three thousand and four thousand degrees, instead of being thirty degrees. All the elaborate relations of temperature and pressure of vapor might be applied to the stability of chemical bodies; consequently, the range of their knowledge had been enormously extended. It might appear to many that the case of a solid body differed from that of a fluid, and it might be imagined that there was no parallel between the gas given off from the carbonate of lime or potash and that of water. If he took a little solid carbonic acid, it would be easy to show that it was a substance that at the temperature of the air was continually boiling. It was actually in a state of ebullition. He would use snow to make a block of ice, and no doubt he would succeed in getting a block of it. There would be a mass of fixed air in the form of ice; and he would be able to show that, if the ice was put in a fluid that did not solidify, it would actually be in a condition of continual ebullition, although the temperature was considerably below that of the Arctic regions. The solid may boil just as much as the fluid. The lecturer then, by a beautiful and highly successful experiment, produced carbonic-acid snow, and, by increased pressure, produced a block of ice. He explained that the density of the solid in the form of ice was about one and a half times that of water. When it was placed in liquid, it readily sank, and was continually giving off gas, and this he proved by placing it in ether. Dr. DEWAR exhibited another experiment, in order to prove that a body that was eminently unstable existed at the temperature of a red heat where that body would be ordinarily regarded as a body non-existent. For this purpose he placed a strip of palladium in a hydrogen flame. The palladium was observed to be vibrating, and that was due to the inequality of temperature forcing the hydrogen temporarily in and temporarily out, and proving the temporary existence of a body of great instability at high temperatures. The inference from this investigation was to show that the generalizations of the greatest importance were those that were the work of an enormous number of minds. In order to reach this analysis of chemical stability they had included the work of many years of the ablest experimenters. The results of a century of experiments were really to go back to the philosophy of BLACK—to study the action of heat on bodies and mixtures, and to examine the analogy of chemical bodies with those subjects with parallel relations—namely, vapors; and in that way they were enabled to apply all the great discoveries of investigators in thermo-dynamics to the stability of chemical compounds. They continually heard of discoveries by astronomers with reference to the condition of the solar atmosphere. Think for one moment what this investigation showed them with reference to the solar atmosphere. It told them the efficacy of sudden explosions on an atmosphere heated to an exceedingly high temperature. The result was, hundreds of bodies were formed for the first time, and hundreds of bodies were decomposed, forming an enormous number of new ones out of the sphere of its enormous jet, simply from the variation in the pressure. No doubt they would have a proof of the application of these principles by the discovery shortly, that there were certain lines in the solar spectrum suddenly produced, and as suddenly disappearing, that were due, not to elementary bodies, but to the formation of temporary compounds. This subject was one of the greatest generality, and enabled them to feel that all the sudden and brilliant discoveries of which they had so many lately, were not to lay hold of them to the exclusion of considering the enormous value of the researches of the laborious investigator.

GOLD PAPER: ITS USE IN SILK MANUFACTURE IN THE MIDDLE AGES.

Silk, cotton, wool, linen, goat's and camel's hair were not the only material used in wrought stuff during the middle ages. Gold, silver, pearls, and gems made their appearance, as well as bird's feathers; horse-hair was also used, but more rarely. Old French chroniclers mention even the beard and hair among the textile matters used in the twelfth century by fair hands. A good many hypotheses have been made about the nature of the gold thread of the sericæ vestes. Gold was used in different ways: 1. In the form of very thin sheets placed on the material and fixed by embroidery, or by means of a hot iron, or by heating—a Byzantine or Merovingian process which lasted till the end of the Ogival era. 2. As narrow sheets, mingled with the web of the textile. The remains of the gold taken from the silk clothes of Charlemagne at Aix-la-Chapelle are pure leaf gold. The Museum of Art and Industry at Lyons possesses several specimens. 3. In sheets covering a silk thread, as our silk twist. This mounting, which was called twisted gold in the 16th century, is very ancient. Sidonius Apollinaris, in his description of the country-house of Pontius Leontius, introduces us to the wife of Leontius "spinning several distaffs in the Syrian fashion, rolling up silk threads on slender pieces of cane, and twisting the ductile gold on a weft." 4. As thread passed through the draw-bench. Such was the gold of Cyprus—*aurum cyprium*—so frequently mentioned in the middle ages. The Milan gold rivaled the Cyprian gold, as the Lombarders had found the secret of gilding a portion of the thread only. About the second half of the 16th century, the gold thread of Lyons attained great fame. Generally the gold thread of the middle ages consisted of a very fine sheet of gold paper twisted around linen or hempen thread, in the Chinese manner, which consisted in mounting gold paper on silk thread. The gilding was, however, of so peculiar a kind that it has defied the researches of the savants. Paper gilding came from the extreme Orient, and is to be found in some Persian and Arabian silks anterior to the 10th century. From the 11th to the end of the 13th century it is to be met in all the Byzantine, Arabian, and other silk manufactures. The coronation garments of the old German emperors, in the museum at Vienna, were manufactured at Palermo (1133 A.D.), and had no other gilding. In the 14th century, when gold and silver threads were in vogue, the paper gold thread found a refuge in Germany, and was greatly in vogue. The Rhenish weavers employed no other gilding than the paper gold thread. The use of gold paper fell into disuse in the 16th century. The cottony appearance of the wrong side of these gildings gave rise to the erroneous opinion that they were preserved by a coating of gold-beater's skin.

The New Guinea gold exploration expedition is likely to prove a failure.

ABOUT FILES.

By Joshua Rose, M.E.

The NICHOLSON File Company has recently issued a treatise on files, which is highly commendable for the thoroughness with which the subject is treated and the value of the matter it contains. From this valuable work we condense the following facts. Files have three distinguishing features: Their lengths (measured exclusively of the tang); their name, which is governed by the shape and the use the file is intended for; and the cut of the teeth, which is varied to suit the nature of the work and the required coarseness of the file.

Mill files, flat files, hand files, and pillar files are of similar form, their cross-sections being as shown from Figs. 1 to 4.

Fig. 1 is a mill-saw file; Fig. 2 is a flat, Fig. 3 a hand, and Fig. 4 a pillar file; the difference being in the proportion of the thickness to the width. Fig. 5 is a square; Fig. 6, a warding; and Fig. 7 a round file, in section. Figs. 8, 9, and 10 are sections of half-round files, termed respectively cabinet, pit-saw, and half-round files. Figs. 11, 12, and 13 are termed respectively three-square, cant, and lightning. Fig. 14 is a knife, 15 a cross, and 16 a feather-edge file.

There are three distinct forms of cut for the file-teeth, known respectively as single-cut, double-cut, and rasp. Each form of cut has degrees of coarseness, governed by the distance apart of the teeth; the widest being known as bastard, and progressing to bastard second-cut and smooth, the latter being the finest.

Single-cut files are those having but one row of chisel-cuts to form the teeth; the cuts being parallel to each other and running diagonally across the file, as shown in Fig. 17. Double-cut files have their teeth formed by two rows of chisel-cuts, as shown in Fig. 18. Both illustrations show coarse files.

Rasps differ from the above in that each tooth stands alone. The diagonal slant of the rows of teeth across the file is varied in degree to suit the work. Thus, while Fig. 18 is suitable for wrought-iron, Fig. 19

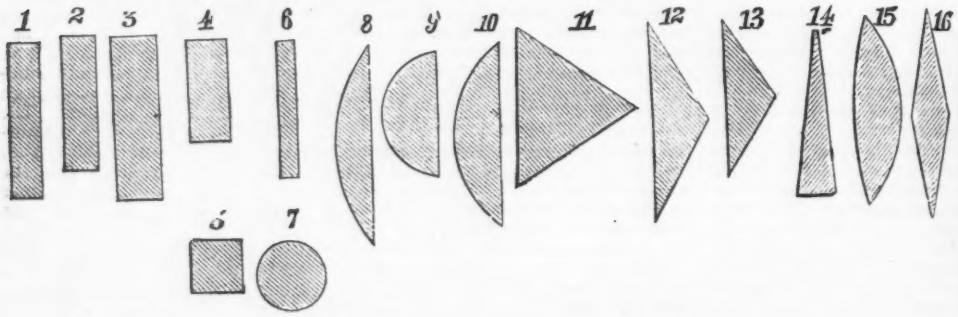

FIG. 17.

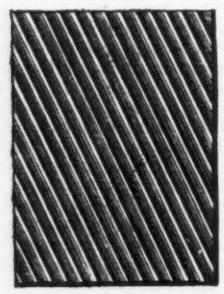

FIG. 18.

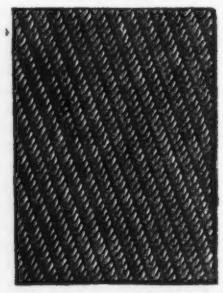

FIG. 19.

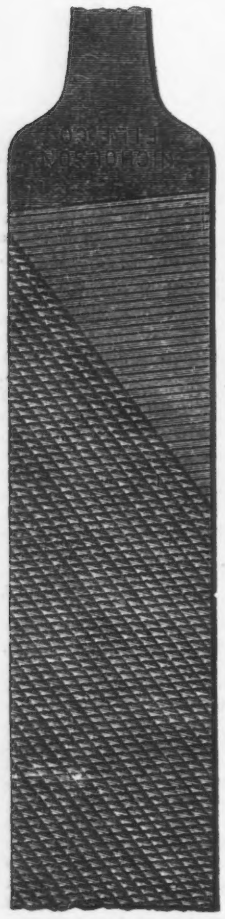

FIG. 20.

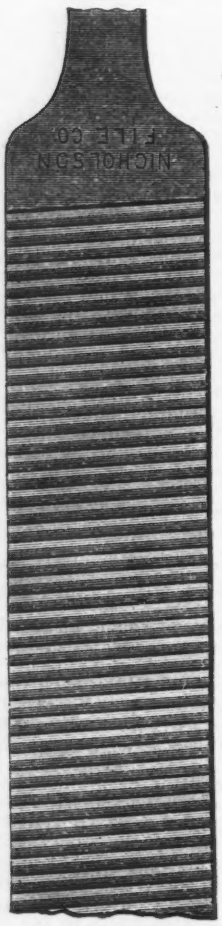

FIG. 21.

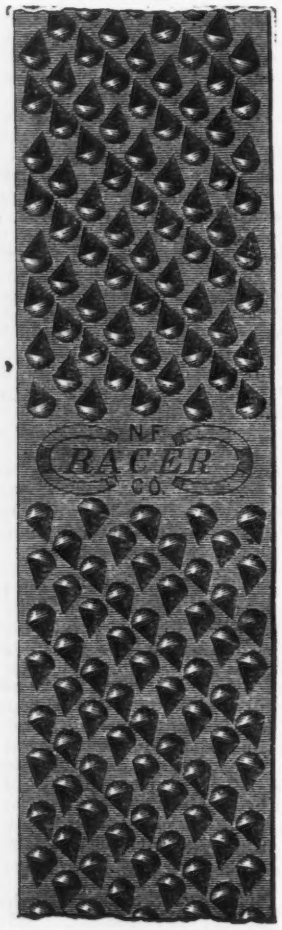

FIG. 22.

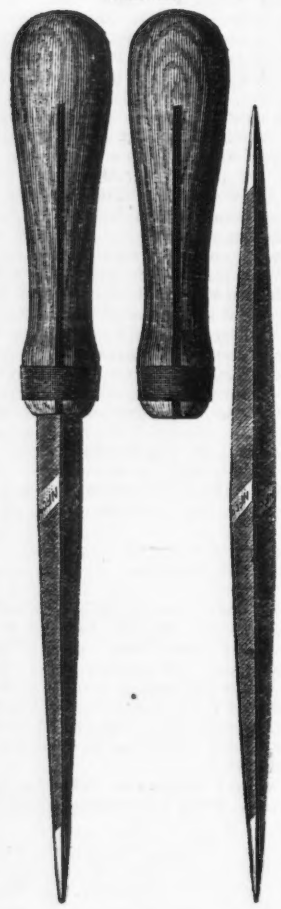

FIG. 25.

FIG. 26.

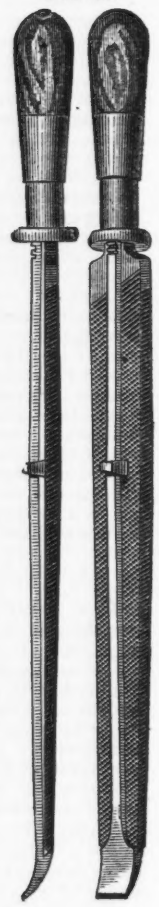

FIG. 27.

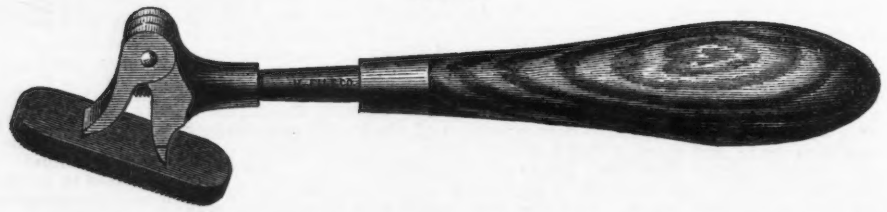

FIG. 23.

FIG. 24.

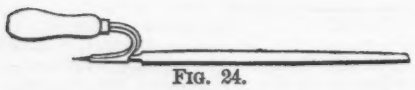

Fig. 1 is a mill-saw file; Fig. 2 is a flat, Fig. 3 a hand, and Fig. 4 a pillar file; the difference being in the proportion of the thickness to the width. Fig. 5 is a square; Fig. 6, a warding; and Fig. 7 a round file, in section. Figs. 8, 9, and 10 are sections of half-round files, termed respectively cabinet, pit-saw, and half-round files. Figs. 11, 12, and 13 are termed respectively three-square, cant, and lightning. Fig. 14 is a knife, 15 a cross, and 16 a feather-edge file.

There are three distinct forms of cut for the file-teeth, known respectively as single-cut, double-cut, and rasp. Each form of cut has degrees of coarseness, governed by the distance apart of the teeth; the widest is designed for brass or similar soft metal; and while Fig. 17 is suitable for iron or steel, Fig. 20 is for lead. This is necessary to prevent the file from sliding laterally during the forward stroke.

Even in rasps it is found an improvement to let the faces of the teeth stand somewhat diagonally, as shown in Fig. 21, which not only gives the teeth a shearing and hence a cleaner cut, but also enables the steadier using of the rasp.

Some novelties in the holding devices for files claim especial attention. Thus Fig. 22 is a file-handle that will hold the file at either end; hence the file may be cut at what is commonly the tang of the file, thus utilizing both ends of the file. To enable the using of a file over broad surfaces, the tang of the file is sometimes bent, as in Fig. 23, or the handle may be made to accomplish the same end, as in Fig. 24.

Other forms of file-holders are shown in Figs. 25 and 26. These latter,

however, spring the file, giving its cutting surface a convexity which is at all times desirable, and in many cases highly advantageous.

For holding stub-files, for use in out-of-the-way places, the holder shown in Fig. 27 is employed.

Messrs. NICHOLSON give in the later pages of their book some hints on filing, which will prove of interest to all those who are interested in the expert use of the file; and they also explain the advantages arising from their specialties; more particularly their well-known increment cut file, which has attained a very prominent position in our workshops.

ON THE SMELTING OF NATIVE COPPER AT LAKE SUPERIOR.*

By F. Kupelwieser.

The materials delivered from the mine consist of masses yielding 96 to 97 per cent of copper, dressed mineral of 80 to 85 per cent, and slimes of 30 to 40 per cent. These are smelted by the Detroit and Lake Superior Copper Smelting Company at two establishments: that at Hancock, in the mining district, has eight reverberatory smelting and refining furnaces, and three cupolas for slag smelting, while the other, at Detroit, has four refineries and two cupolas only. The refineries are of the ordinary South Wales pattern, except that a portion of the arched roof is made movable in order to facilitate the charging of masses of copper, which are lowered on to the bed by a crane, and passages are left in the fire-bridge for the introduction of heated air in the refining process. The charge consists of 8½ to 9 net tons (of 2000 lbs.); the largest masses, being placed below, are covered by the dressed mineral, 1 to 1½ cwt. of limestone, and 4 or 5 barrows of rich slags. The furnace is charged at 2 P.M., and fusion is complete after twelve hours' firing, the slags being drawn at 2 A.M., and at intervals up to 7 A.M., when the refining process commences, air being introduced for about one hour and a half until the copper is completely dry, when the refining slag is drawn and coal added for reducing the dissolved suboxide. The subsequent operation of poling, commencing at 8 or 9 A.M., lasts about an hour, and the ladling of the metal, when at a proper pitch, into ingots, two hours more; so that the furnace is emptied at noon, and two hours are left for examining and repairing the bed before commencing the working of the next charge at 2 P.M. The copper is cast partly into rectangular bars of 4 to 7 inches by 4 feet long, for wire-drawing, but more generally into small ingots, deeply notched on the under surface, weighing about 16 lbs. each. The yield per charge is 6·63 tons of ingot copper, and the consumption of bituminous coal is 3·62 tons in 24 hours. The slags, containing from 8 to 12 per cent of copper, are smelted in MACKENZIE'S cupola furnace, which is of an elliptical section; the hearth measures 2 feet 3½ inches by 4 feet 2 inches, and the stack 3 feet 6 inches by 5 feet 6 inches, and 9 feet 10 inches high. The hearth is 2 feet 10 inches deep, the blast being distributed through a narnow slit in the lining, forming a continuous tuyere somewhat similar to that of the Raschette furnace. The boshes are formed by a hollow casting, 1 foot 8½ inches high, cooled with water. About 20 tons of slags are passed through the furnace in ten or twelve hours, the only flux employed being limestone to the extent of 35 or 40 per cent of the weight of the material treated.

The smelting is effected for account of the mines, on tolls, $18 per ton of mineral and $13 per ton of slags being charged by the smelters. The cost of labor is said to be $19 per charge, and $8.60 and $10.56 per ton of ore and copper respectively. From 17,000 to 18,000 tons (of 2000 lbs.) of mineral are smelted annually. H. B.

ELECTRICAL BREVITIES.

Prof. PERSIFOR FRAZER reports the interesting observation that early in last June he tried a telephone with a diaphragm mounted so as to vibrate freely except in the circular line, where it was bound fast. With several other telephones in circuit, but muffled so that they could not take up the direct vibrations of the voice, he found that the over-tones produced in the diaphragm of one telephone, by a musical note sung into the mouth-piece, were reproduced in the others. This shows the extreme minuteness of the motion necessary to produce sound by fluctuations in the transmitting power of the line wire.

M. DE WALL has observed that when two electric sparks are simultaneously produced, at the extremities of a short tube smoked inside, the two discharges give figures in the form of a black ring at the middle of the tube. When the sparks are not quite simultaneous, the ring is slightly displaced. It is suggested by the author that this observation may afford a method of determining the velocity of sound, and of the speed of propagation of electricity in a conductor.

The *Telegraphic Journal* records the fact that the Southeastern Railway Company has fitted to all its trains Mr. WALKER'S system of electrical communication between passengers and guards. The Brighton Company, we learn from the same authority, is about to follow the example.—M. BARTOLI proposes to detect the existence of very feeble currents by causing the invisible bubbles which are formed on a platinum wire in water when a current is sent through it, to set up a violent ebullition in superheated water.—Professors HOUSTON and THOMSON, of Philadelphia, describe a new system of electric lighting, and an apparatus for utilizing the same, in the October issue of the *Franklin Institute Journal*. The object of their researches was to produce a system that would permit of the use of a feebler current for producing the electric light than that ordinarily required; or, to put it differently, they propose to use a current of insufficient intensity to produce a continuous arc. The new system permits also of the use of a powerful current in such a manner as to operate a considerable number of electric lamps placed in the same circuit. The investigators referred to propose to use what is known as the "extra spark," well known to electricians in the bright flash which appears when a conductor of considerable length is suddenly broken. This "extra spark" will appear, although the current is not sufficient to sustain an arc of any appreciable length at the point of separation. In the new system of HOUSTON and THOMSON, one or both of the electrodes are caused to vibrate to and from each other (in practice the negative electrode, made of such size as to waste very slowly, alone is vibrated instead of vibrating both). The electrodes are placed at such a distance apart that in their motion toward each other they touch and afterward recede a certain determined distance apart. These motions are made to follow each other at such a rate that the effect of the light produced is continuous. The mechanism regulating the vibration of the electrode may be any of the devices commonly employed for similar purposes. This discovery promises important results in connection with the problem of electric lighting.

The recent annual meeting of the American Gas-Light Association in New York, at which were represented the leading gas engineers and others prominent in the management of gas-works throughout the country, discussed at length the much-mooted question of the substitution of the electric light for gas. The following is a brief *résumé* of the drift of the discussion: The members of the Association, it appears, profess to have little fear of any encroachment upon the production and consumption of coal-gas by the general introduction of electric-lighting systems. In this expression of opinion they fortify themselves by reference to the existence of several apparently insuperable obstacles to the success of the latter; namely, the difficulty of transmitting currents of required strength to any considerable distance; and the difficulty of dividing the current so that it shall be made practically available for domestic uses in dwelling-houses. Even were both these difficulties overcome, the seemingly paradoxical argument is urged, that the very brilliancy and purity of the electric light would preclude its popular adoption. Its illuminating power might be modified or tempered by surrounding it with opalescent or ground glass, but the uncompromising clearness of the light would still, they think, be felt to such an extent as to make it undesirable for use in parlors or ball-rooms, where beauty is most effective in a less uncompromising radiance.

The remarks of Mr. GEORGE WARREN DRESSER, editor of the *American Gas-Light Journal*, upon this subject, present the feeling of the coal-gas interest perhaps more decidedly than those of any other speaker at the meeting. He said: "The electric light is simply a coördinate branch of illumination. That is, for certain purposes it will be valuable, but I do not look upon it as interfering with the general use of gas in any way, or as at all likely to do so. Our American gas manufacturers do not look upon it as likely to interfere with their business. It may scare some timid stockholders who believe every thing they see in the newspapers. They may think that the gas business is going down; but I assure you that petroleum is a much more vigorous opponent to gas than the electric light as at present developed. No one can say what is going to happen in the future; but up to the present time there is certainly no reason to apprehend the downfall of the gas business. Even if the electric light were to be brought to such perfection in its adaptation to popular requirements as to realize all the expectations that sanguine people form of it, it would still require a long time for its general introduction. For outdoor service, however, the lighting of large areas, for illuminations, displays, and, in short, for such uses as the calcium light is now put to generally, the electric light is unapproachable and of very great value."

He was asked the question as to his belief in the claimed divisibility of the electric light, and replied decidedly that he did not believe possible either that or the profitable transmission of its current to any considerable distance.

The admirable *résumé* of the present status of the electric light, by Prof. SILLIMAN, and which appeared, as our readers will recall, in one of our recent issues, confirms in general the conclusion that, in the present state of electrical science, the electric light can not be made to serve the purposes of a domestic illuminant; but he by no means infers, in view of recent progress in the art of electric lighting, that the problem may not be solved in the near future. It behooves the members of the Gas-Light Association, therefore, not to be too confident of the issue.

REMARKABLE SCIENTIFIC PREDICTION.

In 1873, in a paper read before the American Philosophical Society, Professor PLINY EARLE CHASE, in a highly-original speculation, indicated the possible existence of several as yet undiscovered planetary bodies. One of these, the third of Professor CHASE'S "harmonically-indicated intra-mercurial planets," bears a remarkable identity in its elements to GAILLOT'S estimated orbit for Professor WATSON'S lately-discovered interior planet, to wit:

	Distance.	Time.
Gaillot (computed)	·164	24·25 days.
Chase (predicted)	·165	24·50 "

Should Professor CHASE'S other "harmonically-indicated" predictions in the same paper eventually receive such extraordinary confirmation, it will deserve a place in the literature of science no less eminent than that accorded to the extraordinary speculations of MENDELEJEFF, the Russian chemist, who, from certain obscure relationships between the physical constants of the elements, predicted the existence of a number the existence of which was necessary to fill out certain theoretical groups. Several discoveries of new elementary substances have been made since the promulgation of MENDELEJEFF'S paper, and have fitted into the gaps of MENDELEJEFF'S series with a completeness that has filled the chemical world with surprise and admiration.

M. de Chancourtois, Professor of Geology at the School of Mines in Paris, has devised an experiment to illustrate the formation of ridges of hills by risings in the crust of the globe while still soft from the primitive heat. M. de Chancourtois represents the globe by an inflated rubber ball, which takes the place of the terrestrial nucleus in fusion, destined to contract on cooling, and, by its shrinking, to produce on the surface the elevations and depressions which constitute the mountains and valleys of the existing earth. The ball is dipped in a bath of melted wax, and, when that has partially set, a small portion of the air is allowed to escape by the tap. The surface of the sphere then contracts slightly, and sinks in portions, wrinkling the wax. When a little more air is allowed to escape, those slight wrinkles become more distinct, and form ridges and hollows precisely analogous to the ranges of hills and valleys on the face of our planet, except that their relief is relatively greater. M. de Chancourtois lately presented to the Academy of Sciences two of these balls, one in the first stage of the operation and the other in the second or final one.—*Engl. Mech.*

* Abstract of a paper in the *Berg- und hüttenmännische Zeitung*, vol. xxxvi., p. 231. From the Proceedings of the Institution of Civil Engineers of London, edited by James Forrest, Secretary.

UTAH MINING NOTES.

Special Correspondence of the Engineering and Mining Journal.

LIVE PINE AND ST. MARK MINES.

The consolidated Live Pine and St. Mark mines are located near the head of Bingham Cañon. They are accessible at all times of the year. They are among the most promising properties in this district. They are not incorporated, but are owned by and are under the personal management of JOHN TIERNAN, Esq., who has had a long and successful experience among the mines of Utah. The titles are covered by U. S. patents, the Live Pine embracing 2400 linear feet and the St. Mark 1500 linear feet. The developments embrace about 3000 feet of shafts, levels, drifts, and tunnels. I give the following details of the developments: No. 1, first level, is 430 feet; No. 1½ is 150 feet; No. 2, tunnel, 220 feet; No. 3, tunnel, 250 feet; No. 4, tunnel, 210 feet; No. 5, tunnel, 175 feet. The Beebe tunnel, located between No. 4 and No. 5, is one hundred feet in length, connecting with two drifts, each 75 feet. No. 6, tunnel, is 125 feet. The St. Mark tunnel is 800 feet in length. The Discovery shaft is 105 feet, connecting with the first and 1½ levels. The first west shaft is 116 feet in depth, connecting with level No. 1. About 60 feet from the top of the first west shaft there are levels and cross-cuts, aggregating 200 feet. There is also a shaft, 45 feet deep, connecting 1½ level with No. 2 level. In No. 2 level is a shaft connecting with No. 3 level, 90 feet in depth. Four chimneys of ore have been discovered on this vein. The shafts have been sunk on these deposits of ore. All the other levels will be connected with shafts, thus obviating the necessity of hoisting-works. The ore will be taken out on the lower levels of the mine, where it can be dumped into the cars of the narrow-gauge railroad. There has been about seventy thousand dollars' worth of ore shipped from this mine since its development. There are large bodies of ore held in reserve.

The mine thus far has been prospected more to make the work convenient for the future handling of the ores. It promises favorably to become one of the largest ore-producing mines in the district.

The ores taken from the mine vary considerably in value running from 50 to 400 oz. in silver, from three to forty dollars in gold per ton, and from 10 to 40 per cent lead. The general average will be about 75 oz. silver, five dollars in gold, and 25 per cent lead per ton. The foot-wall of the mine is syenite porphyry; the hanging wall is quartzite, being a contact which is considered to be a permanent vein. The dip is about 70°. The strike is northeast and southwest.

TOLEDO MINE, LITTLE COTTONWOOD DISTRICT.

This mine is fast growing into prominence. It is a true fissure vein in quartzite, and developed to a depth of 400 feet.

Under the management of D. H. BENTLEY, Esq., who took charge September 1st, 1878, the mine is proving to be valuable. The company is using a duplex air-compressor (Bowers), driven by a turbine water-wheel, which works all right in summer, but freezes in winter, so that there is not a supply of water.

Machinery is now on the ground, and will be erected and ready for use in four weeks. Steam-power will then be used. Regular dividends of a small amount may then be looked for. The yield of ore from September, 1878, was $14,000; expenses, $8000; leaving $6000 for the treasury.

SALT LAKE CITY. ARCHIBALD.

HEATING FEED-WATER BY THE EXHAUST STEAM FROM NON-CONDENSING ENGINES.*

In this number is described an apparatus invented by Signor CHIAZZARI, of the Alta Italia Railway, for feeding the boilers of locomotives, and other non-condensing engines, with water heated to within a few degrees of the boiling point. The article contains a short account of the methods before adopted, and of difficulties met with, and then an illustration and description of Signor CHIAZZARI'S "pump-injector." The peculiarity of this apparatus consists in bringing the feed-water in a finely-divided spray into contact with a portion of the exhaust-steam, during its passage through the pump, and of an automatic arrangement for shutting off the supply from the tender the moment the regulator is closed, thus preventing the admission of cold water to the boiler. Mechanically the pump appears to be successful, as it has worked without trouble since January, 1876. Economically, it seems also to have answered, for the saving in fuel in a trial of four months is said to have been 21·58 per cent,† although, owing to the size of the pump being insufficient, a certain proportion of the feed had to be supplied cold. M. L.

THE TEREDO AND ITS DEPREDATIONS.‡

By Dr. E. H. Von Baumhauer, Commissioner to the Centennial Exhibition from Holland.

(*Continued from page* 313.)

II.

Contrary to the opinion of SELLIUS, who regarded the teredos as hermaphrodites, QUATREFAGES has taught us that they are of both sexes and that the ratio of males to females is about one to twenty. The females are oviparous. The eggs are expelled by the branchial siphon: QUATREFAGES found them in that siphon and in the branchial canal itself. The mode of fecundation is, however, unknown; it is supposed that, in that act, two different teredos project their siphons and bring them in contact.

As regards the metamorphoses which the eggs undergo, either in the branchial tubes or in the water, nothing has been added to what was made known through the researches of QUATREFAGES in 1849. That naturalist has taught that the egs pass through the series of modifications, from the starting-point, which one meets with in the examination of all animals—that is, the formation of the germinative area and of the vesicle of Purkinje, the disappearance of this and the breaking up of the vitellus. The eggs undergo their development in the branchial cavity of the mother; the embryos resemble very small, rounded animalcula of vesicular form, and are provided with vibratile cilia, by the aid of which they have regular movements, and probably are expelled from the branchial cavity into the siphon. In a third phase of development the bivalve shell is formed, the foot appears on the outside, the vibratile cilia form a sort of crown, and the embryo thus possesses the faculty of locomotion as well by creeping as by swimming. The development of the eggs takes place from time to time, and especially in the month of June, although even as late as the 29th of July HARTING found eggs in all the teredos which he opened. The development of the eggs progresses very rapidly; in four days they pass out of the embryonic state, fully equipped for living in wood. Toward the end of June, KATER observed them in large numbers on the surface of wood, and by the 15th of July he found them in the interior in the form of perfectly-developed teredos. Even in the month of December, but no later, he saw young teredos enter into pieces of wood placed by design in the water; at that time they were from eight to fourteen days old, and, although very small, they resembled in every respect older teredos.

Teredos penetrate wood naturally, by very small openings, in a direction perpendicular to the surface (Figs. 12 and 15, *C*); then they generally turn about in order to follow the direction of the woody fibers, usually upward, but sometimes downward. Although they do not enter into the earth or mud, one generally finds the first trace immediately above the line of the mud in which piles are driven; it is at this point that piles destroyed by the teredo generally break off.

When the teredos are lodged in a piece of wood, one recognizes them by very small holes on the surface and the extremely delicate tubes which project from them (Fig. 12, *e*, *d*). These are the siphons, only one of which shows at first, the other appearing later. These siphons are generally kept outside the wood in the water, but the slightest touch causes the animal to retract them. One of them is shorter and larger than the other, but they both seem to serve for the expulsion of the feces, which largely consist of particles of wood reduced to a very fine powder. It is known that the teredo does not perforate wood for nourishment, but only to procure a suitable abode; the woody substance, detached in the boring, passes through the intestinal canal, and then is expelled in the form of a very fine white substance by one of the siphons, generally, according to M. VROLIK, by the shorter, but sometimes by the longer. The long siphon appears to serve principally for the introduction of food, which consists of infusoria, diatoms, and other inferior animalcula, which the sea water brings with it into the siphons. It is nevertheless still uncertain whether the matters expelled through the longer siphons come directly from the intestinal tube, or if they are first introduced from outside with the inflowing water, to be expelled again after a short sojourn inside.

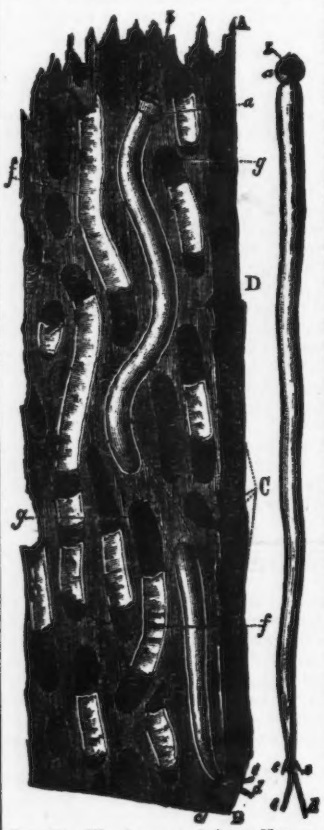

FIG. 12.—Wood exposed from November, 1874, to September, 1876, in crib at Pier No. 1, New York, North River, twenty-five feet below mean low tide.

The teredo requires for respiration a clear, pure water. It has often been remarked that piles placed in dirty, muddy water, near drains, for example, are protected thereby. The water should have, moreover, a certain degree of saltness; the teredo can not live in brackish water. This is a point to which we shall return later.

The teredo continues to grow in the wood; while the gallery which it forms presents near the surface a diameter of only one quarter to half a millimeter, it enlarges little by little, until it reaches a diameter of five millimeters and more. As regards his length, and consequently that of the tube which incloses him, we have sometimes found it to be thirty to forty centimeters. He never goes upward more than half-way between the flow and ebb of the tide; although the teredo is thus, for a short time, partially above the water, yet it appears that the wood holds a sufficient amount of moisture to sustain his life temporarily.

The researches of KATER have still further shown, what had already been remarked by SELLIUS, that the teredo can hibernate in the wood, and that it is those individuals, thus preserved, which in the spring go through with all the phenomena of reproduction—that is, the formation of eggs, fecundation, development, and expulsion of the young.

The part of the external integuments which constitutes the mantle deposits a calcareous matter, forming an interior lining to the gallery in the wood (Fig. 12, *f*); between this calcareous casing and the body of the animal there remains a space sufficient to prevent any inconvenience, at least during the act of respiration; for it is possible that when the teredo absorbs water, which serves for respiration, his body is distended and fills exactly the calcareous tube. The form of this tube, secreted little by little, corresponds exactly with that of the gallery, which has been slowly perforated in the wood; it has the appearance, also, of a series of rings placed one against the other. As the animal progresses, a new ring is added to those which existed before, so that when the tube is closed at its extremity, by a calcareous film, its length represents the total length of the animal (Fig. 12, *b* to *c*). Among the segments of the tube, those which are nearest the surface of the wood are the oldest and hardest; in the interior of the wood, where the gallery ends (Fig. 12, *g*), the calcareous ring, newly

* Abstract of a paper in *L' Ingegneria civile e le Arti industriali*, vol. iv., p. 12. From the Proceedings of the Institution of Civil Engineers of London, edited by James Forrest, Secretary.

† This saving is probably due in part to other causes, the heat required to raise the feed water, say from 50° to 200° Fahr., being but 13 per cent of that required to evaporate it from the former temperature under a pressure of 150 lbs.—M. L.

‡ Extract from the Archives of Holland, Vol. I. Translated by Edward R. Andrews.

formed, is at first soft, flexible, and of slight consistency; later, it becomes solid, and closes up the tube as has been remarked by SELLIUS. In the variety of teredo described by us, we have never observed the formation of two openings surrounded by calcareous matter, situated side by side, like an eight placed sidewise, ∞,* and serving as a passage for the siphons, as described by DESHAYES.

The calcareous tube, once formed, constitutes for each teredo his own abode, where he isolates himself from his companions, and has nothing to fear from their close proximity. One never sees one teredo pierce the tube of another. The tubes make their way side by side, and cross each other in every direction, but, be the wood ever so worm-eaten, there always remains a woody wall, often very thin, it is true, between two adjoining tubes.

The very existence of the adult teredos seems dependent upon the wood. Withdrawn from their galleries and placed in sea water, they could be kept alive by KATER scarcely more than three or four days. Left in the wood, but taken out of sea-water, they would die within twenty-four hours. Deprived at the same time of contact with wood and sea-water, they perished at the end of one or two hours. In damp wood, that is, wood soaked with salt-water, their existence is prolonged somewhat. Wood and sea-water are, then, both necessary. If these two conditions of existence are furnished them, one can, KATER assures us, keep them alive during several months.

The teredo does not always remain in peaceable enjoyment of the home

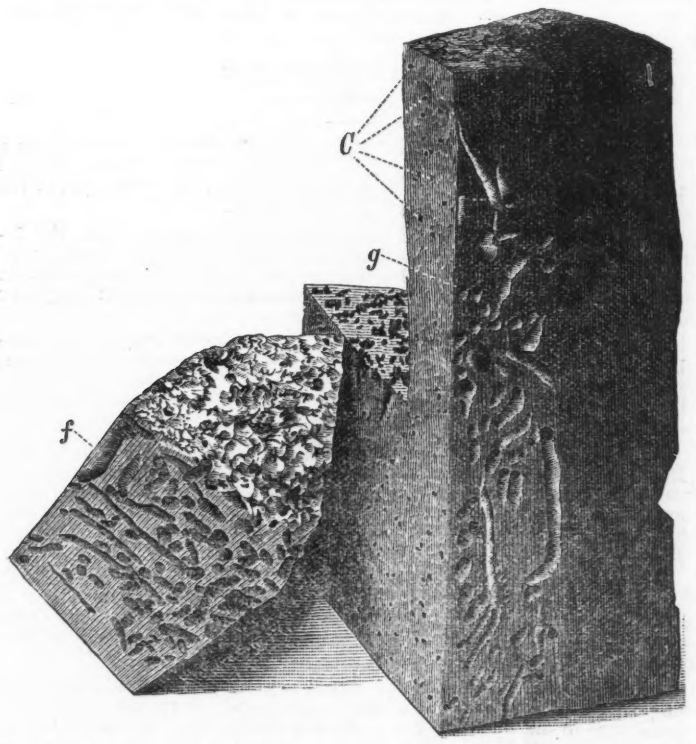

FIG. 15.—This cut was made from a piece of pine-slab, partially creosoted and exposed one season (1877) in the Gulf of Mexico. Only the dark-colored portion on the right side of the block was creosoted for this experiment. The rest of the block, *untreated*, was entirely riddled by the teredo navalis up to the edge of the creosoted portion, but that the destructive marine worm carefully avoided.

he has constructed and the nourishment the water brings to him. He finds himself exposed to the attacks of an enemy, of an annelid to which the late M. W. DE HAAN has given the name of *Lycoris fucata* (Fig. 13). In our day, as well as at former epochs, this annelid is constantly found wherever the teredo exists. His eggs and embryos are met with in the midst of those of that mollusk.

FIG. 13.

KATER has remarked that the adult annelid, leaving the muddy bottom, where he has hibernated, and in which the piles are driven, climbs along the surface of the wood toward the opening made by the teredo; there he sucks away the life and substance of his victim; then, slightly enlarging the aperature, he penetrates and lodges in place of the teredo. Later the annelid reappears and seeks for new prey. All the early writers on this subject state that they have found this annelid in wood at the same time with the teredo. It is remarkable that a similar annelid, perhaps the same, has been found in the cavities hollowed out in stone by the *pholades*.

It is important that it should be generally understood that this annelid is not only harmless, but renders the greatest service in devouring the wood-destroyer. It is a narrow annelid, ten to fifteen centimeters long, provided on his sides with a great number of small feet terminated with a point and garnished with hairs, and showing in front a pair of strong upper jaws, horny and sharp, and lower jaws bent backward in form of hooks and carried outside by the aid of the lower lip, which is developed somewhat like the finger of a glove turned backward. Behind the head are four pairs of tubular-formed gills. With these weapons the annelid pursues and devours the teredo. The observations of KATER teach us that he is generally found in the empty galleries with the remains of the teredo; sometimes even he is seen as if clothed with the integuments of the teredo, while he is occupied in ransacking his intestines. Once KATER had the rare chance (which, by the way, only secures such good fortune to very careful observers) to seize the moment when an annelid, coming out of one of the openings of wood, at once took possession of a teredo that he had placed on the bottom of the vessel which held the wood. He saw the annelid seize the teredo with his jaws, draw him into the canal which he occupied, and devour him so completely that there only remained the two valves of the shell.

It is in an entirely different manner that the cirripeds (*Balanus sulcatus*) aid in preserving wood. When these animals, to which sailors and the inhabitants of our coasts give the name of *Pustules of the Sea*, or *Sea Thorns*, multiply to such an extent on the surface of wood that their disks touch, without leaving the least vacant space, the natural consequence is, that the young teredo can not find any place where it can attach itself, and hence it is impossible for him to penetrate the wood. This preservative effect is produced even when the shells have fallen, provided the disks adhere to the wood.—*Popular Science Monthly.*

(TO BE CONTINUED.)

* Some Oriental varieties have this form. I have seen them at the Boston Institute of Technology, with solid tubes one and a half inches in diameter.—TRANSLATOR.

LOCATION OF MINING CLAIMS—SQUARE AND OTHER METHODS CONSIDERED.

By J. H. Morton, M.E.

In whatever way a mining claim may be located, two points are to be secured; first, a sufficient extent along the vein upon its strike or length; and, second, uninterrupted opportunity and right to work to the deep; for long experience has proved that the greater value of mines is found to extend to a considerable depth from the outcrop.

If, by this new term, "square locations," it is meant to confine mine owners, by law, to the mineral matter found within vertical planes drawn downward through the side lines of a square location made upon the surface, without regard to either the dip or strike of the mineral lode, then the change would be very disastrous to mine owners on lodes where the dip is less than 45° from the horizon, unless the locator is allowed a surface area wide enough to protect his right of working to the deep. On the other hand, if the locator of a mine is allowed a location of say 3000 feet in width, or 1500 feet on each side of the outcrop of his vein, it is plain that he might as well be granted the entire mineral right to almost any district he might locate in; and still 1500 feet on each side of the vein will not afford complete protection in all cases. There are abundant instances to prove this, as in Camp Floyd and Leeds districts in Utah, where the ore deposits dip at angles of from 3 to 10 degrees from the horizon. In such cases a miner might locate even 1500 feet on each side of the vein, and still other locations could be made by sinking shafts to strike the deposit further toward the dip. In Dry Cañon, Utah, for instance, the best mines dip at angles of only about 30°, and on Hidden Treasure hill a shaft could be sunk at a distance of fully 1000 feet from the outcrop of the Hidden Treasure lode that would strike the vein at a depth of not much over 150 feet from the surface; and if the square location plan was embodied in law, the owners of that valuable mine would be cut off from all future benefit to be derived from their property. Illustrations of this kind may be found in nearly all the districts where the ore deposits occur in the stratified rocks, which are really the rocks of the majority of the silver lead districts of the West.

One great and valid objection to this plan is, that if such large locations could be made, a few of them would cover a whole district, and the development of a valuable portion of the public domain would be committed irretrievably to the caprice or convenience of perhaps a single person; and here is the dilemma, if square locations are to be made, either the locations must be large enough to fully protect investments, or mining will degenerate into the condition of a petty lottery, in which no one can win a prize. There has been too much "tinkering" with the mining laws already. The law of 1866 granted 3000 feet along any lode, and conceded all the rights of depth and vein boundaries that were needed, or at least the right to follow the vein to the center of the earth or the ends of the claim were never denied; only the surface boundaries were not defined, and hence arose conflicts from crowded locations. The law of 1872 gave definite surface lines, but was chaotic and crude as to the right to the vein, so that it is a question of implication whether a vein may be followed along its strike to the full length of the claim, if it so far departs from its supposed course as to cross the side lines of the claim. If this may not be done, then all that part of the law relating to the extension of vertical planes drawn downward through the end lines is meaningless and obscure. The question is, what does the law mean when it offers a citizen 1500 feet upon any vein or lode discovered on the public domain? and, secondly, what is the best method of securing his property in his discovery to him? In the first place, he should have what the law offers him—1500 feet upon the vein he discovers—no more and no less; it should be upon the vein he discovers, and no other. Then, if his vein "outcrops," so that it can be readily traced, let him have 100 feet of surface on each side of his vein to the extent of his claim. But if the vein does not outcrop, so that this can be done, then let him locate his claim as nearly as possible on the line of the vein; and, if he finds that his vein departs from the line of his location, he should be allowed to follow it into the land adjoining, until he has reached the distance located by him in that direction from the initial point of his claim; and then let the law provide that in case any later location shall be made upon his portion of the same vein outside of the boundaries of his surface location, such later location shall not be liable for damages done before the fact of identity of the lode shall have been established by continuous workings. All mining claims should, as at present, extend to the center of the earth, and 50 feet on each side of the lode will protect a claim against piratical locations as well as 300 feet; but such surface right should not entitle the owner to any part of another lode which intersects his, except such portions as are found between the walls of his own vein; and the right of the owner of such intersecting vein to follow his lode through the ground of the other should also be affirmed. Miners should be required to record their locations the same day they make their locations. Under the present practice they are allowed from 10 to 30 days in which to record their claims, and the rightful discoverer often finds out, months afterward, that some one knowing of his discovery had filed a notice in advance of him, and then very generally the hardest swearer gets

away with the property. It should be borne in mind that not one location in a thousand ever proves to be a valuable mine; and it is the practice of a good many prospectors to go out on the public domain with a roll of paper and a lead-pencil in their pocket, and locate every thing that sticks out of the ground. Then they have thirty days to look around, and herd their "locations;" at the end of thirty days, another round is made, and another lot of papers deposited, and the old ones destroyed, and *bona-fide* miners, coming to search for locations, are met by these frauds at every step, and turn away disgusted. Make the miners record their claims, and pay the recorder, and then fewer of these bogus locations will be made. The recorder should be required to file with the register an abstract of each location recorded by him every month, sending fifty cents for each claim to pay expenses at the U. S. Land Office. This will aid to preserve the records, and, in case of accident to the local records, would be authority in disputes. The U. S. Surveyor-General of the Territory, or State, or the Register, should have authority to hear and decide disputes as the Register has in land cases. It would simplify matters in case of patent surveys, which can now only be decided by a regular suit at law; besides, it would acquaint the surveyor with the proceedings of his deputies. What the West requires is a law that will give a man a fair proportion of any vein he discovers, and protect him in his rights thereto; and when miners make locations on a valuable lode, they want all of that lode that the law allows them, without any trick or chance of surface indications; and whether they have one acre or 500 acres of surface makes no difference to them if, by an unavoidable error in making their location, they lose that part which is alone valuable to them.

THE SILVER CLIFF MINES, COLORADO.

By R. Neilson Clark.

Among the several mines, the hundred of prospecting claims and shafts, of Silver Cliff, Custer County, Colorado, two workings are of especial interest, the Silver Cliff and Plata Verde. To them, above all others, the attention of the expert, student, and prospector should be directed.

Several years before wagon-roads existed here, Old Baldy Butte, or Round Mountain, as it is now called, stood as a prominent landmark on the old trail leading from Cañon City, through Oak Creek, to the German colony of Colfax, in Wet Mountain valley. How many hours have been spent on it by our best and ablest old-timers, as from its top they watched the rounding up of cattle and horses, never finding the value of the rock upon which their horses tramped, no one can tell. But the fact is proved that their old friend and point of observation contains in its center a mass of silver ore, the value of which, to-day, can be only estimated.

Upon the southwest slope of this quartzitic butte, lies the Plata Verde mine. The ore-bearing rock has been opened by an open-cut into the face of the butte, which at this point has a slope of about thirty degrees. The cut is twenty-five feet long; it has been worked on the stratifications of the rock, with its regular width of six feet, with these stratifications pitching as they do, at an angle of seventy degrees from the horizontal, one easily can imagine himself standing in a fissure vein of remarkably good walls, and with every appearance of durability. Further and closer examination will show, however, that the ore exists in the small fractures, and chiefly in the clefts of stratification and cleavage of a metamorphic sand-rock, and that the common rock forms the matrix between these *layers* of ore. Through the apparent foot-wall a cross-cut has been started, of but small size, but sufficiently large to show the continuance of these ore layers, or "*impregnations*," outside of this stratification.

If one stands at the inside face of the opening, and looks outward along either of the so-called walls, he plainly sees the Silver Cliff workings. These lie on the trend of stratification, about seventy degrees south of west, not a mile distant.

The Silver Cliff workings are larger, and have been worked at nearly right angles to those of the Plata Verde. The owners, finding seamage on the lines of cleavage, adopted them for their direction of work. They have opened up a piece of ground ninety feet long on the run of cleavage by fifty feet wide on stratification. The quarry is twenty feet deep at the face; it may average twelve feet in depth. Six prospecting shafts have been started outside of the edges of this piece of work. They horseshoe around it, the open space being the face of an abrupt cliff, which, perhaps forty feet high, may have given the name to the mine.

Shaft No. 2, being in approximate line with Plata Verde, and only eighty feet distant from the edge of the quarry, contains silver ore, and, so far as I know, is the only one of the six that does. It is twenty-six feet deep.

The owners of the Silver Cliff, by their cross working, have given the observer a rare chance to examine this rock and the occurrence of ore in it. The rock, as in the Plata Verde, pitches to the southeast, at an angle of about seventy degrees; the ore lies in the clefts of stratification, cleavage, and of small fractures. It shows distinctly the characteristics of impregnation, by surface-water action, into the clefts of an uplifted metamorphic sand-rock, in the neighborhood of which I fail to find the slightest trace of former volcanic action. Perlite exists in masses, pieces of which show one of the feldspars on one side, and this metamorphic feldspar—perlite—on the other. The heat, produced by pressure when these stratified rocks were tilted, seems to have been sufficient to alter a sand-rock; it should then be sufficient to partially fuse a feldspar.

The value of this impregnated rock can not be judged by the usual low estimate so commonly applied.

I have roughly estimated the ore in sight, and here give my figures, with the sincere trust that they will not be taken as a basis for purchase or sale. The Silver Cliff is now being tested by a competent miner, whose figures should be exact.

On the Silver Cliff, shaft No. 2 is about ten feet below the surface of the quarries. It is twenty-six feet deep, and continues to contain rich ore, without any signs of diminution; thus we have a piece of ground still imperfectly proved, one hundred and thirty feet long on stratification, by ninety feet wide, with an average depth of perhaps twenty-two feet, which, at fifteen cubic feet to the ton, would yield seventeen thousand tons. As far as I can learn, two thirds of what has been quarried has been shipped, and is said to have yielded one hundred and fifty ounces per ton.

The original amount of ore, as proved by present workings, must have contained, then, not far from one million six hundred thousand ounces of silver.

The Plata Verde open cut has been begun at a place chosen by the prospector for reasons best known to himself. It certainly is not at the bottom of the pay. The ore-body can be traced for two hundred and fifty feet on stratification above this cut, and sixty feet across. Taking the proven depth of the Silver Cliff mine as basis here, we have a piece of ground, containing twenty-two thousand tons, and upon the Silver Cliff basis two million two hundred thousand ounces of silver. The ore is usually a chloride of silver, coated with the black oxide of manganese and iron. It is often bright green when first mined, but quickly becomes black on exposure to the light. I have noted some pieces of wire silver, an eighth of an inch thick and some pieces an inch long, occurring with horn-silver. Some of the horn-silver has the appearance of wire, suggesting that chlorination may have occurred since the formation of the bed.

The finer particles are often so coated with this manganic-iron that the finest crushing is necessary to uncover them. From one mill-sample, taken directly from under a dry battery, worked with a forty-mesh-to-the-inch screen, only twenty per centum of the silver could be leached out by sodium hyposulphite. Part of the original sample, having been triturated for a long time in an iron mortar, yielded forty per centum. Ore from another mine yielded seventy per centum, as taken direct from the same battery.

ROSITA, COLO., Oct. 30, 1878.

NOTES.

The *British Medical Journal* says that a site has been secured for a crematorium near London, by the Cremation Society of Great Britain; and Mr. Eassie, C.E., has been instructed to erect upon it a pyre of the kind designed by Gorini and now in use at Milan.

IMPROVEMENT IN SOLDERING IRONS.—A novel soldering iron, the invention of M. Paquelin, was recently described before the Academy of Sciences, Paris. Its distinctive feature is a platinum receptacle, in which heat is instantaneously generated with air and petroleum vapor or air and coal-gas.

M. Duveyrier has just shown to what portions of Africa explorers should direct their attention. Seven vast regions yet remain unknown or shrouded in mystery. As the exploration of Africa has gone on at the rate of about 234,285 square kilometers per year, all of that continent should be known in less than forty-eight years.

IVORINE MINERALE is the name applied by M. Roger, of Paris, to a lately-invented substitute for horn and ivory. It can be made to take various colors, and especially dark hues. By pressing the warm mass into forms, various useful articles, such as umbrella and cane handles, door-knobs, ink and pen-holders, buttons, etc., etc., are produced.—*D. Industrie Ztg.*, xix. 387.

An extensive deposit of lithographic stone has been found in Estill County, in Central Kentucky, which is said to be of sufficient extent to supply the entire demand in this country for years to come. This stone takes as fine a polish, and has been pronounced by lithographers to be in every particular as good, as the best German stone.

The Japanese government have agreed to grant a loan of $1,500,000 for the purpose of working some of the coal-fields which spread over an immense area in the island of Yezo. Recent surveys by geologists warrant the estimate that there is workable coal enough in that island alone to produce a yearly yield for 1000 years equal to that of all Great Britain.

A valuable deposit of onyx has been found in Sonoma County, and it is the more valuable because it is small. Some specimens exhibited in San Francisco are pronounced superior to any thing of the same kind yet discovered on this coast. The striations and shadings are remarkable for their variety and beauty, and make the onyx very suitable for ornamental purposes.

The oldest pieces of wrought-iron which are known are, probably, the sickles which were found by Belzoni under the pedestal of the sphinx in Karnac, near Thebes; the blades which Wyse found imbedded in the wall of the great pyramid; and the piece of a saw which Layard dug up at Nimrod. These remains are now owned by the British Museum.—*Fortsch. der Zeit.*

The greatest trigonometrical operation ever yet attempted, the junction of the Spanish and Algerian triangulations, is about to be undertaken. The Spanish engineers are posted at Sierra Nevada and Mount Tetica, the French at Fillaoussen, near Nemours, and Ben Sabra, near Oran. The latter, it is expected, will be headed by Commandant Perier, of the Bureau of Longitude.

BLUE MANGANESE COLOR.—A French authority gives a method for making a fine blue manganese color by heating in an oxidizing atmosphere two to three parts of silica or kaolin, eight parts of nitrate of baryta, and three parts of oxide of manganese. He gives also a blue chrome color for pottery, which is obtained by heating violently with an access of air a mixture of 15 parts of boracic acid, 15 parts of alumina, 20 of carbonate of magnesia, and two of chromate of baryta.

According to recent reports, there is now great enthusiasm over educational matters in Japan. There are 24,000 common schools in the empire, with an average attendance of 2,000,000. There are 216 high-schools, with an average attendance of 18,000, and 90 normal schools, with an attendance of 8000. The course of study in the common schools is similar to that in this country, and the schools, generally speaking, have been modeled on the American plan. The teachers number 45,000, and are licensed by the Government Board of Education.

WOOD FOR WALL-PAPER.—The use of wood for a wall-paper is not a novelty, but a great improvement in its preparation has been made. The

wood is cut to the thickness of paper, and by a peculiar process stuck on the paper, which serves as a protection against the influence of the walls on the graining and color of the wood. The delicacy of the machinery employed in cutting so thin a veneer may be gathered from the fact that 200 leaves are cut out of an inch of white maple wood, and 125 out of wood with very open grain, such as oak and walnut.—*N. W. Lumberman.*

A DELICATE TEST FOR NICKEL.—Boettger recommends the xanthogenate of potassa as an exceedingly delicate test for the presence of nickel. The addition of a small quantity of this reagent to a solution containing nickel salts, produces an intense yellow coloration. The addition of a large quantity causes a yellow precipitate.

The same reaction (coloration, and, on addition of more of the reagent, a yellow precipitate) is yielded by salts of copper ; but the color disappears at once on the addition of a few drops of ammonia, while in the case of nickel ammonia does not affect it.

LECTURE EXPERIMENT.—An old experiment of De la Rive's may be used (M. Treve shows) to demonstrate to a large audience the influence of *pressure of contacts* on the intensity of a current. You hold in your hand the extremities of the two wires of an electro-magnet, and cause them to meet between its poles. In this position the sound of the rupture may be considerably varied, according as one wire is applied more or less strongly against the other. The sound, which is hardly perceptible when the two wires touch slightly, becomes like a pistol shot if they have been pressed strongly together.

INDELIBLE PENCIL-MARKS.—The *Papier Zeitung* says : "Any ordinary drawing-paper is slightly warmed and then rapidly and carefully laid on the surface of a bath, consisting of a warmed solution of bleached colophonium in alcohol until the entire surface is moistened. It is then dried in a current of hot air. The surface of the paper becomes smooth, but readily takes the impression of a lead-pencil. In order to make the lead-pencil impressions indelible, the paper is warmed for a short time on a stove. This method may prove valuable for the preservation of working drawings when a lack of time will not permit the draftsman to finish them in ink."

PATE DE BOIS.—In the Norwegian section of the Paris Exhibition, no less than 17 exhibitors send samples of the newly-developed "*pâte de bois*" industry. The article named is really the wood of the pine-tree pulped, and formed into paper or carton by compression. The whole forms a most interesting exhibit, from the sheets of wood-pulp card-board to the highly-decorative cornices and panels, many of the designs being, moreover, both good and simple. This industry bids fair to become a very important item in the export trade of Norway. The export of this class of goods to France and England varies from 800 to 2000 tons per annum ; and we learn that the demand is rapidly increasing every year.

RENDERING WOVEN FABRICS INCOMBUSTIBLE.—An accident in a match manufactory, in which a girl's clothing caught fire, lately induced M. Sieborath, of Dresden, to experiment upon processes for this purpose. Saturation with five or ten per cent alum solution gave no good results ; the stuffs burnt with a flame after the impregnation, which, moreover, spoiled their appearance, On the other hand, a five per cent solution of phosphate of ammonia proved quite successful ; the impregnated clothes did not burn with flame, but were merely destroyed by carbonization. Lastly, a solution containing five per cent alum and five per cent phosphate of ammonia was tried on linen and woolen stuffs. The fabrics thus treated did not even burn when they had before been vigorously rubbed with gunpowder. The powder flashed, but left the stuff unconsumed. The clothes lose their incombustibility by getting wet or being washed. It is a disadvantage that they can be worn only in certain places, and that after washing a fresh impregnation is required.

TO REMOVE TIGHT STOPPERS.—To remove glass stoppers when tightly fixed, it has been recommended to apply a cloth wet in hot water. This is an inconvenient and frequently unsuccessful method. The great object is to expand the neck of the bottle so as to loosen it on the stopper. If, however, the latter be heated and expanded equally with the former, the desired effect is not produced ; and this is often the case in applying hot water. By holding the neck of the bottle about half an inch above the flame of a lamp or candle, for a few seconds, we have never failed in the most obstinate cases. The hands should be wrapped in a towel, and great care should be taken not to let the flame touch the glass, as this might cause it to crack. The bottle should be kept rapidly turning during the operation, so as to bring all parts of the neck equally under the influence of the heat, when it will be rapidly expanded, and the stopper may be withdrawn by a steady pull and twist. Following this plan, we have never failed once out of hundreds of attempts. When the bottle contains alcohol, benzine, ether, or similar inflammable liquids, great care must be taken lest the stopper should come out suddenly, and the contents of the bottle take fire.—*Amateur's Hand-Book.*

BANCA TIN MINES.—The only product worthy of interest is the *tin*. Models are in the Paris Exhibition giving the methods adopted for mining the same. Soundings are made to ascertain whether this tin is to be found at a given spot—generally at the bottom of the river-beds. The operation is performed with Mr. Akkeringa's tools, which differ but little from those used in other countries in similar cases. The workmen are generally Chinese, who come in search of a fortune, after which they return to their own country. A model represents the mine. Here is shown the river, which is drained. The water is conducted into given spots, where the tin is washed. A portion of the water turns a wheel, which carries the product tin plus sand to the surface, where it comes in immediate contact with the water. After the washing is completed, the separation of the tin is accomplished by placing the mass in wooden basins, held between the hands. To these is given a backward and forward movement, and the contents separate according to their density. Now comes a model showing the furnace where the smelting is performed. This, as may be imagined, is very primitive. The fuel is wood charcoal. Behind the furnace is a ventilator. The movement is given by a water-wheel. Frequently three smeltings are necessary before the metal is permitted to flow into the mold—which, when full, represents a "Langot" of about 32k. Besides the above, I notice several models of the houses, showing where the miners eat, sleep, and also the kitchen, meeting-rooms, etc. A pyramid shows the total product of tin during the period of 45 years, and also 400 "Langots" of this metal, having each the weight mentioned above. This represents the production of one day at Banca. It might be well to state that these operations are carried on by the government. There are samples of the tin as it is found in the river-beds. This looks much like black sand. Models of the tools made use of are included in the collection.

THE PLATINOTYPE a recent photographic novelty described in a paper read by Mr. W. Willis, Jr., before the late British Association Meeting, is a photographic print obtained upon paper in platinum in form of a finely-precipitated powder. In this state, it is well known this metal possesses an intensely black color, and, precisely as in its massive state, is wholly unalterable by atmospheric influences. Hence photographic images composed of this substance may naturally be expected to be as permanent and unalterable as any that the chemist may predict. To effect this precipitation of the metallic powder and to cause it at once to develop and to constitute the picture, Mr. Willis takes advantage of a peculiar chemical reaction which he was the first to notice, namely, that when solutions containing platinum salts are brought into contact with a hot solution of ferrous oxalate in potassic oxalate, the platinum is precipitated to the metallic state. The photographic process employed by the author, and which makes very simple use of this observation, is described as follows :

"Paper is coated with a mixture of aqueous solution of ferric oxalate and potassic chloro-platinite (?) ;* then dried and exposed to light under a negative. After it has had a sufficient exposure, it is floated on a hot aqueous solution of potassic oxalate and a platinum salt. This solution instantly develops the picture, which is then washed with water to remove the chemical salts adhering to the picture. When dried, the print is finished. For this process, the merits are claimed, that it is the first instance in which platinum has been made use of as a pigment, and that it is the first photo-chemical process in which permanent results have been obtained by the direct contact of the pigment with the fiber of the paper, without the intervention of a sizing material."

GENERAL MINING NEWS.

COLORADO.

MORE CARBONATE DISCOVERIES.

We take the following from the Denver *Tribune* of recent dates :

"CARBONATE CITY, BOULDER COUNTY, October 31, 1878.

"Since I wrote you yesterday, the population of our young city has increased from fifty to about seventy-five people. The hills are alive with prospectors, and the country is being staked very fast. There is no longer any doubt as to this being a carbonate strike. The veins show large deposits of mineral, associated, as in Leadville, with lime and porphyry. The veins give evidence of being horizontal and lying in strata through the mountains. In every instance where the vein has been found it carries with it the same peculiarity of the Leadville deposits. Assays run from one ounce up to two hundred ounces per ton, and this, you understand, is from surface or float ore entirely.

"Nothing has yet been sufficiently developed to show the ore in place. We have lime deposits of great depth, and porphyry in great abundance. It has been said by some (certainly uninformed persons) that the general formation is not right for carbonate ore, but the miner who has prospected and mined long in Colorado generally comes to the very wise conclusion that 'gold and silver are just where you find them.' So we have come to the same very sage conclusion, and hence we are satisfied. As depth is attained, the ore grows better and veins larger.

"Men who have prospected and mined in Leadville pronounce it as good showing as any they ever saw, and never go away without first getting their location made, and then rush off for grub and pick and shovel. No drills are needed for the mining of this ore.

"The deepest tunnel in yet is that of Brown & Ghaskell, seventy-five feet from the beginning, and nothing but pick and shovel have been used to break ground.

"We have no hotel accommodations—a thing fearfully needed. People coming to the camp are usually provided with blankets and something to eat, though we are not far from the thriving little villages of Gold Hill and Sunshine, they being only about two miles away.

"A half-interest in one of our mines was offered for sale this morning for $500, and three parties stood on the dump and offered the money, which was accepted from the first taker. This is only a start, and the impression prevails that he gave away a fortune for a nominal sum. Before next Saturday night this camp will have a hundred men or more.

"The discovery was first made by a Leadville miner, who remembered having seen such ore on Left Hand. He immediataly came back, staked out his claim, and the other day sent a sample lot to Denver to see how it would run. Assayers and experts say the ore is precisely the same as the Leadville ore. They are very reticent about expressing an opinion as to the value of the ore, but it is reported that J. Miles Phillips, our music man, got an assay of four hundred dollars from a claim he had just taken.

"The deposits on Left Hand are reported as being very extensive. I have not been able to get any thing definite from Four-Mile, but there is no doubt that the genuine carbonates are there. One of our substantial citizens told me last night that he knew of two or three other places in the county where he had seen the same thing."

A later dispatch to the *Tribune* dated Boulder, November 2d, says : "There has certainly never been any thing seen in Boulder equal to the present excitement over the new strikes, and as evidence that they have something to base hopes upon, a button was shown on the streets to-day, the result of an assay from ore brought from Left Hand by Dartt Deitz and others, which ran eight hundred and fifty ounces. A new stage line will be put on on Monday. The whole country is staked for miles around, and reports of new finds are coming in every hour."

CALIFORNIA.

THE BODIE DISTRICT.

The *Standard* summarizes the mining operations in the Bodie District for the week ending Oct. 30th, from which we condense the following : "We hear rumors of new strikes both above and below the surface, and companies are being incorporated so rapidly we find ourselves almost unable to keep track of them. On the hills adjoining the town are erected now twenty-two steam hoisting works and some more in process of construction, while many are either awaiting the arrival of machinery or are working with whim or windlass. We can boast to-day of more steam machinery than is to be found in any mountain mining

* [This mixture in aqueous solution appears to us to be an incorrect statement. Ferric oxalate is an insoluble salt ; the last-named compound will probably be better known as platino-potassic chloride.]

town in the world. We do not except Virginia City in this assertion, as, although they have more powerful machinery, they have not so many as we can boast. All our mining men are straining every nerve to get every thing in readiness for the approaching winter, and we believe now that the great majority will succeed in getting their various works under proper cover before snow flies. The mines most developed, such as Bodie, Bulwer, Belvidere, Consolidated Pacific, Dudley, Champion, Goodshaw, etc., are all looking well and producing their usual quota of ore. We notice many reliable mining men and capitalists coming in, who have all expressed themselves as well pleased with the outlook of our district, and many of whom will invest here and become identified with our future. We are more fully satisfied, as time goes on, that the period of apparent inactivity we have experienced, resulting from the big gamble on Comstock, has proven more favorable to our future prosperity than otherwise, as we have had time to open our mines and show plainly the merit of the same.

"The east cross-cut in the 400 level of Black Hawk is in 34 feet. The rock in the face is hard. Two very nice seams of ore have been crossed, one 6 inches and the other 4 inches in width. The west cross-cut, same level, is in 36 feet. Three streaks of ore have been cut—one of 5 inches in width, assaying $75 per ton; the other two are each 3 inches wide. The new shaft, at the south end of the company's grounds, is down 85 feet. At 65 feet from the surface the ledge was cut, containing 5 feet of quartz. At 78 feet another quartz vein was cut, 12 inches wide. The rock is good sinking and rapid progress is being made. A new engine will be placed at this shaft, and will arrive here the last of the present week. Timbers for the gallows-frame are now on the ground.

"In Bodie the new shaft has attained a depth of 180 feet, and the Bruce winze 100 feet. The drift south on the Bruce ledge is being steadily run with a progress of about 3 feet per day. Drifts north and south on the Gildea are being run from the cross-cut from the Bruce. Drifts will be at once started north and south from the bottom of the Bruce winze. The ledge in the bottom of the winze looks well, and the ore is fine. The Gildea looks well in both drifts, particularly in the south. The ledge in the face of the Bruce south drift is looking well and yielding fine ore, and looks even better in raising on it in the south end. The general appearance of the mine is very favorable. The mill is running steadily on the ores, and every thing is working well.

"The Mono shaft is being sunk very rapidly, a progress of 34 feet having been made during the past week; total depth, 200 feet. The formation is looking very favorable. At 250 feet a station will be cut out, and cross-cutting commenced east and west. The ground in the bottom is easy working. The new engine, which is of sufficient size and strength to carry the shaft to a depth of 1500 feet, is working splendidly. The hoisting works are nearly completed, want of lumber retarding the work. The timber for the guides to the cages, which is of Oregon pine, is being received."

NEVADA.

The Comstock.—From the mining summary in the Gold Hill *News* of the 30th ult. we extract the following:

"The flow of water in the Ophir from the Union Consolidated has been gradually less for several days past, and is to-day reduced to ten inches, the most of which is being taken to the surface by the Sierra Nevada pumps.

"The flow from the east drift on the 2100 level of that mine also appears to be gradually decreasing. The main incline was cleaned out, and every thing put in readiness to resume sinking this afternoon.

"The west drift on the 2100 level of the Savage has penetrated about 20 feet of quartz which affords low assays—ranging from $5 to $10 per ton—and which appears to be gradually increasing in value as the drift advances."

UTAH.

The Ontario Silver Mining Co.—We learn from the officers of the Ontario Silver Mining Co. that the repairs at the mine are progressing with all possible dispatch. The pumps are now working, and the mill started on the 6th inst.

The company will pay a regular monthly dividend of 50 cents per share on the 15th inst.

The production for October (the mill having been closed down for ten days during the month) was $102,978, assay value. The following circular has just been issued by the President to the stockholders:

"OFFICE OF THE ONTARIO SILVER MINING COMPANY,
"SAN FRANCISCO, CAL., October 31, 1878.

"*To the Stockholders of the Ontario Silver Mining Company:*

"On the morning of the 19th inst. the hoisting works of the Ontario mine were destroyed by fire. The damage is estimated by the Superintendent at about $100,000. A more material damage, however, than this is a consequent delay in the output of the mine. In consequence of the damage to the connections with the pumps, the mine has been partially filled with water, and it will take at least a month to free it again, so as to resume the hoisting of ores. At the time of the accident the mill was supplied by water from the mine, and this, consequently, necessitates a stoppage of the mill until the pumps are again in operation.

"So soon as they are, the mill will resume its operations, as there is ore on hand at the mill—enough to run it for 30 days, when it is supposed the mine will be again yielding. Fortunately a new shaft had been sunk with a view of abandoning the old shaft as a hoisting shaft, and new hoisting works were about completed at the foundry and ready for shipment, so that our delay will be much less than otherwise it would have been.

"A new furnace is in process of construction at the mill, and as soon as the mine is in working condition, the output will be greater than ever.

"As to the mine, it never looked better, or gave greater promise of permanency, and the reserves in sight are sufficient to pay to the stockholders the full market value of the stock at the time of the accident.

"Stockholders can be assured of the value of their stock, and should not be induced to sell it because of this temporary reduction in dividends. The amount of money on hand at the time of the accident was sufficient to make good all losses.

"J. B. HAGGIN, President Ontario Silver Mining Co."

THE SILVER REEF MINES.

The Salt Lake *Tribune* says:

"The Cristy Mill and Mining Company, of Silver Reef, was organized in California with sufficient capital to purchase a large number of the best claims in the sandstone district of Southern Utah. All the properties belonging to this company are situated on the Buckeye Reef, and three of these have been proven by actual developments to be good mines. The Maggie covers the face of the Buckeye Reef, running lengthwise along it with its west side line down to the gulch between the White and Buckeye reefs. Joining the Maggie on the west, and running parallel with it up and down the gulch, is the California, also owned by the Cristy Company, which has in it the most positive proof of its being a splendid mine. The Maggie was the first of these two claims purchased by the Cristy Company. The vein cropped out on the face of the reef. Developments soon showed, however, that not only the hanging wall on the back of the reef had been washed away by the gulch stream, but that the vein itself had disappeared also in the same manner, cropping out again on the west side of the gulch, where the California claim was located. It became necessary, therefore, to purchase this last-named property, in order to keep the Maggie vein, and developments are now going on in both claims. The Maggie is tapped by a tunnel from the back of the reef, striking the vein, which shows about five or six feet of good ore. North and south drifts on the vein have been run about seventy-five feet in each direction, the south drift being n high-grade rock the whole distance, while the face of the north drift is not looking so well. In the California the company have the vein strong and rich, with every prospect of its dipping under the White reef.

"The incline is already down 140 feet on a seven-foot vein of ore which breaks from wall to wall at about $60 per ton, with occasional streaks of horn and native silver. This incline, which is intended as the permanent working shaft of the mine, is heavily timbered the entire distance from the surface, and about seven by ten feet. At the depth of 100 feet the first north and south levels are being commenced, while the main incline is being steadily pushed down. The California and the Stormont are the only mines in camp troubled with water, which is accounted for by the fact that the workings on both are below the bed of the creek.

"The company's mill is run on the Tecumseh ore almost exclusively. The Tecumseh Hill is cone-like in shape, with the strata, which are badly broken, but not much displaced, dipping east, north, and west in a semicircle, and containing innumerable large crevices, which are filled with loose earth, roots, and, in some instances, rich ore. To gaze at this mine from a distance, it presents the appearance of a sandstone quarry, which simply it is. Large quantities of rich rock have been taken from the mine, and reduced at the Cristy mill, but still the supply seems almost without limit. In riding over the summit of the hill, the foreman will point out to the stranger, here and there, a swale in the almost flat surface of the rock, where $1000 or $2000, or perhaps even $5000 worth of ore was taken out. Almost the whole surface of the hill has been skimmed off once or twice, and as many as three times, and each time a new surface is exposed to the sun for a few days silver blisters will make their appearance. Immense quantities of low-grade rock have not been touched, but are left standing for some future day, while the richest of the ore is being removed to the mill at the rate of about thirty tons daily. In the mean time the workings are being extended in all directions, following the dip of the ore-stratum.

"The Cristy mill is located in the town of Silver Reef, about a quarter of a mile from the Tecumseh mine. It is a very neat and well-built little structure, having a five-stamp battery, but hardly sufficient pan capacity to keep the five stamps constantly running, owing to the fact that forty tons of ore a day can be passed through the battery. The machinery of the mill is run by a forty-five horse-power engine, being sufficient to operate a mill of double the Cristy's capacity. The average amount of ore put through the mill daily is twenty tons of $50, and the yield is one brick of about $2000 value every other day. The company employs some twenty mill hands, and, on an average forty miners, paying out for wages in the neighborhood of $8000 per month."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending September 17th:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
208,009	Metal Stamping, Shearing, and Punching Machine	Joseph T. Bedford	New York, N. Y.
208,011	Compound for Treating Coal Preparatory to Burning	Morris B. Eaton (a)	Leroy, N. Y.
208,054	Pump	Amos H. Ashley	Stuyvesant F'ls, N.Y.
208,095	Anti-Friction Journal-Bearing	Seth Hill	Trumbull, Conn.
208,114	Photo-Mechanical Printing	Johann B. Obernetter (b)	Bavaria, Germany.
208,149	Governor for Steam-Engines	Benjamin Brazelle(c)	St. Louis, Mo.
208,192	Force-Pump	Oliver K. McIntire	Springfield, O.
208,194	Heater and Feeder for Steam-Boilers	George W. Moore	Pittsburg, Pa.
208,198	Wire-Belting	Gustav A. Pickhardt	Barmen, Germany.
208,213	Dummy Engine	John F. Thomas	Ilion, N. Y.

(a) Assignor of ½ his right to Lewis H. Rogers, Avon, N. Y.
(b) Assignor to B. F. Powelson and Adolph Mueller, Detroit, Mich., and W. A. Cooper and W. E. Lindop, St. Thomas, Canada.
(c) Assignor to the Brazelle Engine Company, same place.

The Patent Office Report.—Mr. W. H. Doolittle, acting Commissioner of Patents, has submitted to the Secretary of the Interior a report of the operations of the Patent Office during the fiscal year ended last June. The number of original applications received for patents was 19,667, and 14,100 new patents were granted. There were also 627 re-issues, and 772 patents granted for designs; 2737 caveats were filed during the year. The receipts of the office amounted to $734,888, and the total expenditures were $665,906. Of the amount expended, however, $50,000 was for the restoration of 18,563 models injured by the fire of last year, and omitting this item, the excess of receipts over expenses was $118,962.

The number of trade-marks registered was 1505, as against only 938 for the preceding year, and the receipts from this source and from the registration of 492 labels amounted to $42,762, a sum eight times greater than the total expenses of conducting the division. Mr. Doolittle recommends that only a part of the $25 fee now charged upon receiving an application for the registry of a trade-mark be thus collected, and that the remainder of the fee be paid upon allowance. He thinks, however, that the charge is excessive, and says: "The fee of $6 paid in label cases, which is not paid until the registration is complete, is a just charge, and as labels and trade-marks are of about the same nature, and protected by the same laws, there is no good reason why the expenses of registration on one case should be greater than on the other."

Mr. Doolittle reports that the recent trade-mark treaty with Great Britain has already proved of great advantage to British citizens resident in this country.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, with the full name and address of parties soliciting the same:

Construction of a Ditch 30 feet wide; Hyde Park, Ill.; John I. Bennett	Nov. 11
Blasting and Removing Start Rock in Echo Harbor, near New Rochelle, New York; John Newton, Lieut. Col. of Engineers, Army Building, New York City	" 16
Repair of Breakwater at Swanton, Vt.; John Newton, Army Building, New York City	" 18
10,000 Cross Ties; J. A. Millholland, 2d Vice-President Cumberland and Pennsylvania Railroad	" 18
Dredging 65,000 to 80,000 cubic yards in the Savannah River, Ga.; Q. A. Gillmore, Lieut. Col. of Engineers, Army Building, New York City	" 26
Burglar-Proof Safe, to be built and placed in County Treasurer's Office, Hamilton County, Ohio; W. S. Cappeller, County Auditor	" 27
50,000 Cross-ties for Denver and Rio Grande R. R.; R. F. Weitbrec, Treas. D. and Rio G. R. R., Colorado Springs, Col	During the Winter
Railway Construction and Working, 2000 miles; F. Braun, Sec'y Dept. of Public Works, Ottawa, Canada	Dec. 1
Establishing and Operating a Steam Ferry across the Missouri River from Sioux City to Covington, Neb.; L. B. Jackson, Mayor Sioux City, Nev	" 2
Railway Construction, 310 Miles; F. Braun, Secretary of Department of Public Works. Ottawa, Canada	Jan. 1, 1879
Gas Illumination of Rio de Janeiro, Brazil; Salvador de Mendonca, Brazilian Consul-General, 42 Broadway, New York City	March, 1879
Locks and Keys for Mail Bags; D. M. Key, Postmaster General, Washington, D. C.	March 20, "
Coal for Schools of Youngstown Board of Education, Youngstown, O	March 29, 1879

A Committee, recently appointed in Woodstock, Canada, to procure information about water-works, has had two engineers upon the ground. Plans and estimates are soon to be ready for the information of the rate-payers of that place.

Prussian Extensions.—A project has been made public for a large extension of the Prussian railway system. By the terms of this project all the towns of Prussia with more than 3000 inhabitants—namely, 1277 towns—are to possess railway communication, four towns only excepted.

Bids for Supplying Light-house Oil.—WASHINGTON, November 7.—The Light-house Board announces that the proposals received for supplying to the service twenty thousand gallons of lard oil have been opened, and are as follows: Washington Butcher's Sons, of Philadelphia, 51 87-100 cents per gallon; H. K. Fairbank & Co., Chicago, 52 3-10 cents; John H. Pool & Macy, New York City, 52 90-100 cents; The Manhattan Oil Company, New York City, 59 cents. The contract will be awarded to the lowest bidder.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending Nov. 2d and years from January 1st:

Tons of 2240 Lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co..	45,509	1,719,022	62,134	1,414,239
D. L. & W. RR. Co.	51,714	1,732,995	74,155	1,509,053
Penn. Coal Co.....	15,834	728,310	31,936	836,966
L. V. RR. Co.....	14,395	666,156	29,606	728,741
P. & N. Y. RR. Co..	623	26,647	1,707	36,143
C. RR. of N. J.....	840	774,510	26,091	1,035,803
Penn. Canal Co....	11,227	305,173	16,656	296,617
	140,142	5,952,813	242,285	5,857,562
Lehigh Region.				
L. V. RR. Co.....	53,836	1,982,373	68,778	2,823,374
C. RR. of N. J.....	19.441	1,087,367	20,824	1,237,228
D. H. & W. B. RR..	.....	26,070	1,762	25,987
	73,277	3,095,810	91,364	4,086,589
Schuylkill Region.				
P. & R. RR. Co.....	163,509	4,105,740	131,458	5,710,035
Shamokin & Lykens Val.....	22,611	634,194	15,818	606,539
	186,120	4,739,934	147,276	6,316,574
Sullivan Region.				
Sul. & Erie RR. Co.	1,092	28,802	289	17,037
Total	400,631	13,817,359	481,214	16,277,762
Increase.....	.....	.....	.....	.....
Decrease	80,583	2,460,403	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Receipts and shipments of coal at Chicago Ill., for the week ending Nov. 2d, and year from January 1st.

	Week. Tons.	Year. Tons.
Receipts.....	44,579	1,465,238
Shipments.....	9,203	232,251

Belvidere Delaware Railroad Report for week ending Nov. 2d:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	556	10,976	33,846
Coal for shipment at South Amboy	5,495	356,202	471,736
Coal for distribution.....	5,738	154,979	161,723
Coal for Company's use.....	1,795	70,385	61,548

Coals Cleared on the Canals of the State of New York for the week ending Oct. 28th, and year from the opening of navigation:

Tons of 2000 lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Anthracite	23,051	519,861	44,707	857,276
Bituminous.....	6,901	156,647	5,893	236,162
Total amount cleared	29,952	676,508	50,600	1,093,438

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads amounts to 69,887 tons, as compared with the corresponding period in 1877.

The Exports of Coal from Baltimore for the week ending Nov. 1st were —— tons, and since January 1st, 27,873 tons, as against 24,705 tons for the corresponding period in 1877.

The Production of Bituminous Coal for the week ending Nov. 2d was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.....	52,586	1,390,582
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	5,238	255,566
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	2,519	125,584
*East Broad Top.....	2.174	51,200
Clearfield Region, Pa.		
*Snow Shoe.....	1,197	20,782
*Tyrone and Clearfield.....	22,229	1,052,564
Allegheny Region, Pa.		
*Pennsylvania R. R	3,742	168,955
Pittsburg Region, Pa.		
*West Penn R. R.....	3,671	151,875
*Southwest Penn. R. R.....	164	21,265
*Penn & Westmoreland gas coal, Pa. R. R.....	11,942	548,831
*Pennsylvania R. R.....	10,716	355,094

*For the week ending Oct. 28th.

The Production of Coke for the week ending Oct. 28th:

Tons of 2000 lbs.	Week.	Year.
West Penn R. R.....	2,081	71,127
Southwest Penn. R. R.....	16,933	640,368
Penn. & Westmoreland Region, Pa. R. R.	941	62,886
Pittsburg, Penn. R. R.....	3,200	94,847
Penn. R. R. (Allegheny Region).....	....	12
Total.....	23,155	869,240

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Nov. 8, 1878.

Anthracite.

The cold weather of the week under review has resulted in keeping up a very fair demand for the harder coals, while some of the free-burning coals, to find a market, have been selling at reduced prices. There appears to be, however, a feeling that no better pric will rule this year, and dealers are disposing of all of the coal possible, either for immediate or future delivery. It is said that the Delaware, Lackawanna, and Western R.R. Co. is not keeping some of the buyers at the auction up to the prices bid.

On Monday, the Lehigh operators held a meeting at Bethlehem, whereat a committee of three, composed of Messrs. Swoyer, Dodson, and Robinson, was appointed for the purpose of conferring with the other interests as to the best plan for regulating the trade for 1879. The committee has no powers except to collect the views of the other companies and to report them to some future meeting. The present position appears to be that the Lehigh operators are unanimous in a demand for an increased tonnage for next year, while the other companies express themselves as unwilling to make a concession. It is further said that Judge Packer does not show much inclination to give the subject consideration until after his company and the individual operators have made up their books for the year, that they may discuss it intelligently. It is also said that there may be a probability of his joining a movement of "all work and all play," or that the companies do all they wish for a certain time and then all suspend operations until the market calls for additional coal. This plan has met with some approval, but the more it is discussed the more numerous become the objections to it. Upon its face, it appears to regulate the production to the requirements of the market, and to do away with the necessity of establishing the percentage that each company is entitled to, for the companies are permitted to establish their own capacities. But then there will still be the inability to move some of the coals with the same ease as others, and those who are so fortunate as to have the most marketable coals will, as during this year, claim some advantage on this ground. Furthermore, it is a question if "all play" can be so enforced as to prevent the filling of breasts with coal in some mines where the pitch of the vein permits it, giving these colleries an advantage, when shipments are resumed, over others that can not do it.

It is claimed that the capacity of the railroads to carry will form the limit of the output; but the transporting capacity can be quickly and largely increased, and the ingenuity of managers will certainly find a means of strengthening the "weakest point" and bringing the amount marketed practically to the limiting capacity of the collieries. In either case, the effect of the arrangement would be:

1. To stimulate both the railroads and mines to still further increase their capacity to produce and transport, which is already much too great. This would involve a heavier charge on the business done.

2. There would be a competition for labor, which would, no doubt, tend to increase wages and bring on strikes, and which would, as a result, injure the men and increase the cost. Again, in the efforts to do the largest business possible, a large amoun of unnecessary capital will naturally be employed, thereby increasing the cost of production and thwarting the object of the combination—prevent the companies from making enough profit to pay fixed charges on their enormous investments. So far the combination for 1879 has taken no form, and it is indicated that it will not before the existing one has expired. And no one can predict what may be done after that. The Board of Control will meet on Tuesday, when the production for November will be increased.

The production of anthracite coal last week was 400,631 tons, as against 486,448 tons the previous week, and 481,214 tons the corresponding week of 1877. The total production from January 1st to November 2d was 13,817,359 tons, as compared with 16,277,762 tons for the like period of last year, showing a falling off this year of 2,460,403 tons.

Bituminous.

There is a liberal amount of activity in this coal. The shipments of Cumberland, however, are being restricted by a scarcity of vessels, caused by the advanced rates of freight at Philadelphia, which have attracted vessels to that port. Although the producers of bituminous coal are dissatisfied with the small business done, and the low prices received, yet when comparison is made with the large loss of trade by the anthracite companies, the result is not discouraging. Great advancement has been made in introducing this class of coal for manufacturing purposes, and it is believed that the business will be greatly increased next year, should the prices of anthracite continue as high as this year. Some of the anthracite dealers fully realize this.

New York.

Wholesale Prices of Anthracite Coal for October Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 65	3 80	4 20	3 65
*Pittston, at Newburg.....	3 55	3 55	3 65	3 75	4 05	3 50
L. Val. Coal Co., at Amboy.	.....	3 75	3 50	3 60	4 10	3 50
Kingston at Hoboken.....	3 50	3 50	3 60	3 75	4 10	3 50
Wilkes-Barre at Pt. Johnson	3 60	3 60	3 70	3 85	4 20	3 60
Plymouth Red Ash at Port Johnson.....	.....	.....	3 70	3 85	4 30	3 60
Swoyers at Eliz. Pt. or S.A...	3 60	3 60	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	...	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port or S. A.....	4 25	4 00	4 05	4 25	4 25	3 60
SCHUYLKILL COAL						
At Pt. Richmond, Phila.						
Hard White Ash.	3 50	3 50	3 50	3 55	3 95	3 40
Free-burning W. Ash. ...,	.....	.....	3 40	3 50	3 95	3 30
Schuylkill Red Ash.....	.....	.....	.....	3 75	4 00	3 30
Lorberry.....	.....	.....	3 80	3 95	4 00	3 40
Lykens Valley Vein.....	.....	.....	3 80	3 95	4 00	3 60
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 20	4 20	4 20	4 20	4 40	3 80
Free-burning W. Ash.....	.....	.....	3 90	4 05	4 40	3 80
Schuylkill Red Ash.....	.....	.....	.....	4 35	4 50	3 90
Lorberry.....	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein.....	.....	.....	4 60	4 70	4 70	4 35

*Fifty cents per ton additional for delivery in New York.

†On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburg, the current date of harbor freight will be allowed from the prices here given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Along side in New York.
Westmoreland and Penn.....	$4.25	.....
At Greenwich, Philadelphia	.....	$5.50
At S. Amboy.	5.00	5.50
Kanawha at Richmond	4.10	5.40
Red Bank Cannel, Pa., at Philadelphia...	8.00	8.50
Youghiogheny, Waverly Co., at Balt ...	4.00	5.65
Despard, West Va.....	4.50	6.00
Murphy Run, West Va., at Baltimore. ..	3.75	5.85
Fairmount, West Va., " " ...	3 75	5.70
Newburg Orrel. Md. " " ...	3.75	6.00
Cannelton Cannel, West Va	....	10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65
Peytona Cannel, W. Va., at Richmond...	....	10.00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2.75@2.90	4.35@4.50
Cumberland, at Baltimore.....	2.90@3.00	4.35@4.50
Cl'rfi'd "Eureka" and "Franklin."		
At mines.....	0.75	....
At Baltimore.....	3.25	4.50
At Philadelphia.....	3.25	4.50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle, at Newcastle-on Tyne.....	7s.6d.	$2 50@ $3.50
Liv. House Orrel, at Liv.....	25s.	13.00
Ince Hall Cannel " ....,	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal.....	25s.	7.50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1.75	$4.50
Caledonia, at Pt. Caledonia.	1.50	4.25
Glace Bay at Glace Bay....	1.50	4.00
Lingan, at Lingan Bay.....	1.50	....
Intern'l Mines, at Sydney...	1.75	4.50
Pictou, Vale Mines, at Pictou	2.00	4.70

Retail Prices.

Per ton of 2000 lbs.

Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered.....	$5.00	$5.00	$5.00
Lack. coal, delivered below 59th St.	4.50	4.75	4.50

Bituminous.

Liv. House Orrel.....	$18.00	American Orrel.....	$11.00
Liv. House Cannel...	18.00	Red Bank Cannel.....	7.00
Am. "	11.00	Cumberland... ..	9.00
Ca'n'lt'n Bl'k, or splint.	10.00		

Baltimore. Nov. 5, 1878.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs.

In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat...	$4.05	Stove....	$4.55
Broken.....	4.20	Chestnut	4.0
Egg	4.30		

LYKENS VALLEY RED ASH.

Broken.....	$4.40	Stove.....	$4.10
Egg.....	4.55	Chestnut.....	4.15

By cargo afloat, 15c. *less* per ton than car prices. To trade from wharf or yard, 50c. per ton *above* car prices.

Boston. Nov. 2, 1878.

COAL.—There is a little more business doing, the increased demand incidental to the season being very freely supplied. Probably the season's business will be distributed through the winter months to a greater extent than

usual. There is no news in regard to the combination, though all sorts of rumors are afloat. Freights are strong and advancing. The brig Zingu, from Hillsboro, N. B., brought 350 tons coal, Boston Gas-Light Company.

We quote Boston wholesale prices as follows:

Anthracite, broken	$4.60	Caledonia	$4.00
" egg	4.70	Newcastle	4.00
" stove	5.20	Cannel, English	18.00
Franklin	5.75	" Library	15.00
Cumberland	4.50	" Buckeye	11.00
Clearfield	4 50	Penn	5.25
Westmoreland	5.25	Youghiogheny	5.25

—*Commercial Bulletin.*

Buffalo. Nov. 5, 1878.

[Specially reported by C. M. UNDERHILL.]

	Delivered at				
	Elmira.	Ithaca.	Syracuse	Rochester.	Oswego
	Afloat.	Afloat.	Afloat.	Afloat.	F. O. B
Lump					
Grate	$3.75	$3.60	$3.60	$3.85	$4.05
Egg	3.85	3.70	3.70	3.95	4.15
Stove	3.95	3.95	3.95	4.20	4.40
Nut	3.85	3.85	3.60	3.85	3.90

	Delivered at					
	Sodus Point.	Charlotte.	Erie.	Buffalo.		
	F.O.B.	F.O.B.	F. O. B.	Afloat.	F. O. B.	Ret. Del.
Lump						
Grate	$4.05	$4.05	$4.55	$4.15	$4.55	$5.15
Egg	4.15	4.15	4.65	4.25	4.65	5.25
Stove	4.40	4.40	4.90	4.50	4.90	5.50
Nut	3.90	3.90	4.40	4.00	4.40	5.00

[Specially reported by LEE & LOOMIS.]

Per ton of 2000 lbs. delivered on cars.

	Lump.	Run of Mine.	Nut.	Slack.
Connellsville coke	$4.75			
Brookfield Coal	3.50			
Briar Hill	3.50		2.85	
" " No. 2		3.15		
Youghiogheny	4.00			
Monterey	3.00	2.60		
Catfish	3.00	2.60		1.70
Stoneboro		2.60	2.50	1.70
Sterling Cannel	4.50			
Cameron		2.80		
Hillside				

Cost of coal from Erie, Oswego, Sodus Point or Charlotte for Western market, same as if shipped from Buffalo.

BLOSSBURG COAL.

Per ton of 2000 lbs.

	To dealers.	To consumers.
By car or boat	$3.25	$3.25
In yard	3.40	3.60
In car		3.65
Delivered		4.00

[Specially reported by E. L. HEDSTROM.]

Until further notice, the following will be the prices for Scranton, Wyoming, Lehigh, and Blossburg coals, per ton of 2000 pounds, delivered free on board vessels at Buffalo N. Y.:

	Lump.	Grate.	Egg.	Stove.	Nut.
Scranton		$4.55	$4.65	$4.90	$4.40
Wyoming		4.55	4.65	4.90	4.40
Lehigh (Sugar Loaf)					

Blossburg, $3.50, F. O. B.

	To dealers.		Retail.
	On cars or boats.	In yard, screened.	Delivered.
Grate	$4.15	$4.25	$5.15
Egg	4.25	4.35	5.25
Stove	4.50	4.60	5.50
Chestnut	4.00	4.10	5.00
Lehigh Lump			
Blossburg	3.25	3.40	4.00

Milwaukee. Nov. 5, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

Retail price per ton of 2000 lbs.

Lehigh prepared, chippings	@$7.00
" " lump	@ 7.00
Lackawanna prepared (all sizes)	@ 6.00
Briar Hill	@ 5.00
Steam cokes	$3.75@ 4.75

New Orleans. Nov. 5, 1878.

[Specially reported by Messrs. C. A. MILTENBERGER & Co

PITTSBURG COAL.

At wholesale (by boat-load)	27c	per bbl. of 180 lbs.
To steamboats	45c.	" "
" manufactories	45c.	" "
" families	50c.	" "

In hhds. (for shipment).... $5.00 per hhd from 5 to 6 bbls.

ANTHRACITE COAL.

Per ton of 2000 lbs.

At wholesale	$7.00 to $8.00
To families etc.	9 00 to 10.00

ST. BERNARD (KY.) COAL.

To steamboats	40c.	per bbl. of 180 lbs.
" families	45c.	" "
Virginia cannel to families	$1.00	" "

Philadelphia. Nov. 7, 1878.

The quota of the Schuylkill Region for November will be filled this week, but it has been concluded to anticipate any extra quota for November or December quota and run until Tuesday, when the Board of Control meets. The uncertainty resulting from this running about from day to day without the possibility of making any promise to purchasers about time of delivery, is a great nuisance. The short and irregular supply of cars adds to the difficulties. The condition of the trade, under such conditions, is no easy thing to ascertain. Since the Board of Control revised once their action, the buyers do not know what to expect, and the trade suffers from it. The scarcity of vessels and high freights cause the transfer of some of the orders to New York. The Reading Coal and Iron Company has plenty of orders at prices considerably below circular rates.

Pittston, Pa. Nov. 5, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond. Nov. 5, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	2.50
Lewiston	4.50	Norwood Gas and Steam Coal	2.70
Kanawha Gas Coal	4.10		

Sandusky. Nov. 5, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre	4 80	4 90	5 15	4 65
Pittston	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon	$2 85	Straitsville	$2 00
Hocking Valley	2 50	Piedmont	1 54

Prices retailed delivered 50c.@75c. above car prices.

San Francisco. Oct. 31, 1878.

COAL—Imports from January 1st to October 1st, 1878:

	Tons.		Tons.
Anthracite	13,804	English	31,702
Australian	109,883	Mt. Diablo	88,288
Coos Bay	23,227	Rocky Mountain	371
Cumberland	2,950	Ione	665
Bellingham Bay	2,820	Carbondale	2,724
Vancouver Island	95,362	Ounalaska	450
Seattle	77,642		

Last week we furnished full statistical tables of the receipts for nine months of the past two years showing a net increase in supplies for this year of 24,404 tons. Our spot market now turns in favor of the importer after a long spell of depression. This is attributed to the present and prospective falling off of imports from Australia and elsewhere for the next few months. Imports for the week under review embrace the following cargoes: Rufus E. Wood from Cardiff, 1204 tons coke; this was sold long prior to arrival. From Nanaimo, Surprise with 820 tons, and Don Nicolas, 1600 tons; price, $6. We have now to note the sale of the cargo of 2454 tons "Grete" No. 1 gas coal, at or about $6. The South Wellington (B. C.) Coal mine is now all ready for business at Departure Bay. The steamer Empire has gone up for the first load. The coal is of the best quality, and the agent, R. D. Chandler, expects soon to be furnishing all that is needed in this market. Considerable money has been spent on the mine, and it will be a first-class place for ships to load, as superior machinery, etc., has been erected to facilitate the filling of vessels. Success to the enterprise. The old Wellington mine has long been furnishing us a very superior family coal, and we are glad to see others coming to the front. Seattle coal from Washington Territory is also quite a general favorite in the market, and may be quoted at $6. Montana, from Seattle, brought us 1000 tons. We note a sale of 500 tons "Bulli" *ex* Gladstone at a trifle over $6; balance of cargo goes into store.—*Commercial Herald.*

St. Louis. Nov. 5, 1878.

Reported by JAMES J. SYLVESTER, Secretary of the Anthracite Coal Association.]

Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna	$7.50@	Lehigh	$8.50@
Wilkes-Barre	7.50@	Connells. Coke.	6.00@
Schuylkill	7.50@	Blossburg	7.75@

Nov. 5, 1878.

[Specially reported by Messrs. LEWIS P. HARVEY & Co.]

BITUMINOUS.

Big Muddy	$3.65	Piedmont	$7.25
Indiana Block	3.25	Pittsburg	4.35
Illinois Coals	2.25@2.50	Peytona	7.50
Blossburg	7.75	Lehigh Val. Ant.	7.50@8.00

Toledo. Nov. 5, 1878.

[Specially reported by Messrs. GOSLINE & BARBOUR.]

We quote the following as the present prices for coal, delivered on cars here, per ton of 2000 lbs.:

Ton of 2000 lbs.

	Grate.	Egg.	Stove.	Chest.
Pittston	$5.05	$5.15	$5.40	$4.90
Wilkes-Barre	5.05	5.15	5.40	4.90
Lackawanna	5.05	5.15	5.40	4.90

Lehigh lump, $5.75.

Ton of 2000 lbs.

Straitsville lump	$2 60	Massillon nut	$2 40
" nut	2 25	Willow Bank lump	2 85
Shawnee lump	2 60	" nut	2 40
" nut	2 25	Cumberland	5 00
Hocking Valley lump	2 60	Blossburg	4 60
" nut	2 25	Morris Run	4 93
Massillon lump	2 85	Gas Coal	3 25

Retail prices, delivered in the city, are: Stove, $500; Grate, Egg, and Chestnut, $5.

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Nov. 7th, 1878

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Albany		1.60	
Allyn's Point	1.00		
Baltimore	40		
Bangor, Me		1.60	
Barnstable	**		
Bath, Me	95†	1.40	
Boston, Mass	1.30@1.35	1.60	1.20@1.60
Braintree			
Bridgeport, Conn.		1.35	
Bristol, R. I.			
Brooklyn	85		
Cambridge, Mass.			
Charleston			
Charlestown	1.55		
Cambridgeport	1.51		
Danversport	1.60		
East Cambridge	1.50§‡		
East Boston			
Eliz'b'th City, N.C	1.00		
Fall River		1.30	
Georgetown	75		
Halifax			
Hartford	1.60@1.65	1.30	
Hastings	85		
Hingham	1.60†		
Hoboken	95	1.20	
Hudson	85		
Jersey City		1.20	
Lynn	1.60		
Medford			
Middletown			
Moncton, N. B.			2.00
Nantucket, Mass.			
New Bedford		1.60	
Newburyport		1.50	
New Haven	95@1.00	1.30	
New London	1.20	1.30	
Newport	1.25		
New York	85@95	1.25	
Newark		1.35	
New Orleans	2.25		
Norfolk, Va.			
Norwich	1.20‡	1.45	
Norwalk, Conn	1.10	1.40	
Pawtucket	1.30‡	1.60	
Petersburg	80		
Philadelphia			
Portland			
Portsmouth, Va.			
Portsmouth, N.H.	1.60	1.50	
Providence	1.20	1.30	
Quincy Point			
Richmond, Va	70		
Rockland			
Roxbury			
Saco			
Salem, Mass.		1.65	
Savannah			
Saybrook			
Somerset	1.15@1.20		
Staten Island	86		
St. John, N. B.			1.00‡
Trenton			
Troy		1.60	
Wareham		1.50	
Washington	70@75		
Williamsburg	95		
Wilmington			

Alexandria and Georgetown to Boston, $1.40@1.45. Washington to Wareham, $1.45. Boston to New York, 95c.@$1.05.

And discharging and towing. † And discharging. ‡ And towing. § 3cents per bridge extra. ¶ And pilotage. ** 1.50§@1.70@1.90.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending Nov. 5th, 1878, are given below.

DATE.	From	To	Cargo.	R'te
Oct. 12	Philadelphia	Aspinwall	Coal	3.25
" 12	Philadelphia	St. Thomas	Coal	2.30
" 12	Philadelphia	Havana	Coal	2.00
" 18	Perth Amboy	Saco, Me	Pig-iron	1.30
" 18	New York	Weymouth	Pig-iron	1.15
" 18	New York	Hyannis	Pig-iron	85
" 25	Perth Amboy	Richmond	Pig-iron	90
" 25	Poughkeepsie	Richmond	Pig-iron	80
" 25	New York	Boston	Iron	1.50
" 25	Curacoa	New York	Salt	9
" 25	Nevassa	Wilmington	Guano	2.25
" 25	Wood's Hole	Pensacola	Guano	1.60
" 29	New York	Paugassett	Pig-iron	95
" 29	New York	Baltimore	Guano	90
" 29	New York	Norfolk	Guano	80
" 24	San Francisco	Nanaimo	Coal	2.00
" 24	Boston	San Francisco	Iron	†
" 24	Boston	New York	Salt	2½c
Nov. 1	Perth Amboy	Port Royal	RR. iron	1.75
" 1	Boothbay	Savannah	*	1.75
" 2	Philadelphia	Somerset	Iron	1.55
" 5	Buffalo	Detroit	Pig-iron	40
" 5	Buffalo	Detroit	Salt	4
" 5	Buffalo	Toledo	Pig-iron	40

* Phosphate. † $10@$12.

Low Freights.—The New York *Shipping and Commercial List* of November 6th, says of the ocean carrying trade: "Some idea of the depression of the shipping interests may be gathered from the current rates of freight at the leading ports of the world. The average rate on cot

ton, from the United States to Europe, is about 11-32d. per pound; petroleum 3s. 6d. per bbl., with no return freight for sailing vessels, and 37½@50 cents per case to the far East. From San Francisco to Great Britain the rate on wheat is 30s. per ton. From Great Britain to New York the steamers frequently accept 5s.@10s. per ton. From Calcutta to New York the rate is $4 per ton, and from the Indian Archipelago 20s. per ton. The causes of this depression are obvious. In 1872-74, high freight rates stimulated ship-building beyond the requirements. The substitution of steamers between the great ports has thrown the sailers in the outside business. Trade all over the world is dull, and ships are plentiful. The gross registry of the sea-going vessels of all nationalities is fully twenty million tons, and their dead-weight-carrying capacity at least one third more. Of this immense fleet no less than five and a half million tons consist of steamers, which by reason of speed, equal in carrying capacity the aggregate sailing tonnage. These steamers can do the entire service performed by the combined mercantile marine of Great Britain and the United States thirty years ago. A reaction must ultimately set in, and a normal condition of affairs be brought about by natural causes. When the shipping business becomes profitable again, the United States will be in a condition to enter the lists as a competitor with Great Britain. Meanwhile, practical men, who appreciate the national glory no less than the theorists, and who clearly understand the condition of the ocean carrying trade, regard the possession of a great mercantile marine at this day as a national curse, and this view is amply sustained by facts."

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to Nov. 6th.

From	To	Rate per ton.	From	To	Rate per ton.
Ashtabula.	Chicago. ..	45	Cleveland .	Ashtabl'a*	.....
Bay City..	Milwauk'e.	60	Charlotte..	Milwaukee	.... .
Buffalo	Erie.....	15	Erie.....	Chicago...	.....
"	Cleveland.	20–25	Fairhaven.	"	70
"	Portage....	80	"	Milwaukee	70
"	Detroit....	†40	Marquette	Ashtabl'a*	... ..
"	Chicago...	45	Oswego ...	Chicago...	70
"	Milwaukee	40	"	Milwaukee	.....
"	Detroit...	15	"	Detroit. ...	45
"	Toledo	15	Sandusky..	Toronto ..	.....
Chicago ...	Milwaukee	25	Toledo	Milwaukee	50
"	Green Bay	30–35	"	Cleveland*	.....
Cleveland.	Chicago...	40–45			
"	Milwaukee	40			

* Iron ore † Salt.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Nov. 8, 1878.

American Pig.—So far as quantity is concerned, the business of the week under review is not worthy of special notice. Prices, however, are very much demoralized. We learn, as a fact, that No. 1 Allentown iron has been offered at Amboy at $16 per ton, cash in five days, while rumor says that it has been offered or sold at as low as $15.50 per ton. Such prices as these must bring ruin, and it is only a matter of time before a reaction must set in. We quote No. 1 Foundry at $16@$17; No. 2 Foundry, $15@$16; and Forge, $14@$15.

Scotch Pig.—We note a sale of 200 tons of Glengarnock, to arrive, on private terms, but said to be at a low price. Outside of this there has been but the usual retail business. We quote Eglinton at $21.75; Coltness, $23@23.50, and Glengarnock, $22.50@$23.

Rails.—We note a sale of 1500 tons of steel rails, and another of 250 tons of 35-lb. iron rails, both on private terms. We quote at Eastern mills at $41@$42 for steel, and $32@$36 for iron rails.

Old Rails.—The demand for these has suddenly disappeared, and with it the higher prices that were established. We quote at $18.50@$19.

Wrought Scrap.—Without business we quote at $20@$21.

Baltimore. Nov. 4, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

The iron market remains unchanged, and we continue last quotations, viz.:

Balt. Char.	$26.00@$28.00	M. & White	$13.00@$14.00
Va. "	26.00@ 28.00	C'lC.B.Blooms	50.00@ 52.00
Anth.No.1....	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2....	18.00@ 19.00	Refi'd Blooms	43.00@ 45.00
" " 3....	16.00@ 17.00		

Buffalo. Nov. 1, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

Prices per gross ton delivered on cars at Buffalo:

	4 mos.
No. 1 Foundry	$18.00
No. 2 "	17.00
No. 3 Forge	16.00
American Scotch A 1	19.00
" " B 1	17.00
" " No. 2	16.50
" " No. 3	.....
Best selected Connellsville coke, per net ton	4.75

Chattanooga. Nov. 5, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.]

Tenn., Ala. & Ga. Charcoal, No. 1 Foundry	$16 00@$17 00
Tenn., Ala. & Ga. Charcoal, No. 2 Foundry	15 00@ 16 00
Tenn., Ala. & Ga. Charcoal, Gray Forge	13 00@ 15 00
Tenn., Ala. & Ga. Coke, No. 1 Foundry	18 00@ 19 00
Tenn., Ala. & Ga. Coke, No. 2 Foundry	16 00@ 17 00
Tenn., Ala. & Ga. Coke, Gray Forge	14 00@ 15 00
Charcoal or Coke, white and mottled	13 00@ .....
Old rails	$18 00@$19 00
Old car wh'ls.	16 00@ 17 00
Wr'ght scrap, No. 1	16 00
Wr'ght scrap, No. 2	$11 00
Cast scrap	10 00
Muck bar	30 00@ 32 00

IRON ORES.

Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron	$1.25
Brown hematite about 55 per cent metallic iron	1.75

Cincinnati. Nov. 5, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1	$21 00@$22 00—4 mos
"	No. 2 "	20 00@ 21 00—4 mos
"	Soft Silver Gray	18 00@ 19 00—4 mos
"	Mill	18 00@ 19 00—4 mos
Tennessee	No. 1 Foundry	21 00@ .....—4 mos
"	No. 2 "	20 00@ .....—4 mos
"	Mill	18 00@ 19 00—4 mos

STONE COAL.

Ohio	No. 1 Foundry	$16 00@ .....—4 mos
"	No. 2 "	15 00@ .....—4 mos
"	No. 3 "	14 00@ .....—4 mos
"	No. 4 "	13 00@ .....—4 mos
"	Mill	16 00@ .....—4 mos

COKE.

Ohio & W. Va.	No. 1 Foundry	18 50@ 19 00—4 mos.
" "	No. 2 "	17 00@ 18 00—4 mos.
" "	Stove	17 00@ .....—4 mos.
" "	Mill	17 00@ .....—4 mos.

CAR-WHEEL

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@ 35 00—4 mos.
Maryland,	" Cedar Point	35 00@ .....—4 mos
Missouri,	" Maramec	28 00@ ... .—4 mos

BLOOMS.

Charcoal	$45 00@$50 00—cash.

SCRAP IRON.

Cast	40c. @ 45c.—cash
Wrought	62½c.@ $1.00—cash

Cleveland. Nov. 5, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

No. 1 Red Specular	$6.00 per ton cash.		
No. 2 " "	5.00	"	"
Red Hematite	4.25	"	"
Lake Champlain ore	5.25	"	"

FOUNDRY IRON.

No. 1 L. S. Charcoal	$22 00	Am. S., No. 1, Ch. Val	$20 00
No. 2 " "	21 00	" " B—1, " "	18 00
No. 1 Anthracite	20 00	" " No. 2 " "	18 00
No. 2 "	19 00	No. 1, Massillon	19 00
No. 1 Bituminous	20 00	B—1, "	17 00
No. 2 "	18 00	No. 2, "	16 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal	$23 00	Nos. 5 & 6, L. S. Char.	$23 00
No 4, " "	23 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char	$23 00

FORGE IRON.

No. 1, Gray	$18 00	White and Mottled	$16 00

Columbus, O. Nov. 5, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

FOUNDRY IRONS

No. 1 Hanging Rock Charcoal	$22.00@$22.50
No. 2 " " "	21.00@ 21.50
No. 1 Hocking Valley soft and strong from pure limestone ores	18.25@ 18.75
No. 2 Hocking Valley soft and strong from pure limestone ores	17.25@ 17.75
No. 1 American Scotch	18.00@ 18.50
No. 1 Moxahala	18.00@ 18.50
No. 2 "	17.00@ 17.50
No. 1 Shawnee	18.00@ 18.50
No. 1 Silver Gray	16.50@ 17.00
No. 2 " "	15.50@ 16.50

MILL IRONS.

Gray neutral	16.00@ 16.50
Mottled and white neutral	15.00@ 15.50
Gray cold short	15.50@ 16.00
Mottled and white cold short	14.50@ 15.00

Louisville. Nov. 5, 1878.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

The demand for pig-iron is improving, and the market is firm.

The usual time, four months, is allowed on quotations below:

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21 00@$22 00	$19 00@$20 00
Southern Charcoal	18 00@ 18 50	16 50@ 17 00
H'n'g Rock, Stc'l & Coke	19 00@ 20 00	18 00@ 18 50
Southern Stonecoal & Coke	18 50@ 19 00	17 00@ 17 .0

"Amer. Scotch"... $18@$19 | Silver Gray... $16@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$16 00@$17 00
No. 1 Stc'l & Coke, Cold-short & Neutral	16 00@ 16 50
No. 2 Stc'l & Coke, Cold-short & Neutral	15 00@ 15 50
No. 1 Missouri and Indiana, Red-short	20 00@ 21 00
White & Mottled, Cold-short & Neutral	14 50@ 15 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$29 00@$30 00
Alabama and Georgia, Cold Blast	28 00@ 29 00
Kentucky, Cold Blast	25 00@ 28 00

Milwaukee. Nov. 5, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton	$23 00—4 mos.
" 2 " " "	22 00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton	23 00—4 mos.
" 2 " " "	22 00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk. Band, per ton	$24 00@ ....—4 mos.
Soft Silvery per ton	21 00@ ....—4 mos.
Ohio Stone Coal	22 00@ . ..—4 mos.

CAR WHEEL.

Lake Superior ores per ton	$24 00@25 00—4 mos

Philadelphia. Nov. 7, 1878.

[Specially reported by JUSTICE COX, JR., & Co., Iron Merchants, 333 Walnut street, Philadelphia.]

Pig Iron.—The demand for pig iron can be reported rather more brisk this week, but nothing better as to price. The sales are largely to customers getting their iron by water, and as the time for closing of navigation draws near they are anticipating their winter wants, as all feel sure that prices can not recede any, and all hope for higher prices in the spring. We report sales of 3000 tons, and quote at $16.50 to $19 for No. 1; $15.50 to $18 for No. 2; $14.50 to $17 for Gray Forge.

Manufactured Iron.—The demand for bars is reported rather dull for the season, and, as prices continue so low, mills out have little encouragement to start up. Most plate-mills have about all they can do, but report no new orders coming in, and, unless something turns up for some of them, they will be stopped for want of orders by the last of this month. No orders for skelp are coming on the market at this time. We quote: Bars, 1 65-100 to 2c. per lb.; plate and tank, 2 2-10 to 6c. per lb., as to quality; skelp is quoted 1 9-10 to 2c., as to quality.

Rails.—The demand for steel rails continues good, and all mills have all the orders they can fill for some time to come. The iron rail mills are mostly busy on orders for immediate delivery. We quote: Steel, $42 to $44; iron, $32 to $36; all at mills.

Old Rails.—The demand for old rails continues good, as it is likely to do until the close of navigation. We quote $18.50 to $20.

Scrap.—Wrought is quoted at $20 to $22; cast, $12 to $16.

Old Wheels are quoted $17 to $18.

Richmond, Va. Nov. 5, 1878.

[Specially reported by ASA SNYDER, Esq.]

A fair demand for pig-iron at quotations. Our mills and foundries have taken about 600 tons the past week.

Amer. Scotch Pig Iron			$21.50@$22.50
Anthracite	" "	No. 1	19.00@ 20.00
"	" "	No. 2	18.50@ 19.00
"	" "	No. 3	17.00@ 18.00
"	"	Mottled	15.00@ 16.00
Coke	"	No. 1	19.00@ 20.00
"	"	No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short			19.00@ 22.00
" " " " "		neutral	27.00@ 28.00
" Warm " " "		cold short	18.00@ 20.00
" " " " "		mill	17 00@ 18 00
Old Rails			16.50@ 17.50
Wrought scrap No. 1			16.00@ 17.00
Cast scrap—Machinery			15.00@ 16.00
Richmond Refined Bar Iron			2.00@ 2.10
Horse-shoes			4.00@ .....
Mule-shoes			5.00@ . ..
Old Dominion nails (standard size)			2.25 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis. Nov. 6, 1878.

[Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.]

Our market the past week has been quiet. Prices of pig-iron for standard brands remain unchanged. We are in constant receipt, however, of low prices for cheap grades of Silver Gray iron, but the quantities are so small that we do not include them in our quotations. Old rails are very scarce, and firm at quotations, and we learn that higher prices have been offered.

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock	$23@$25	Assorted Bar Iron	$1.95 rates.
Tennessee	22@ 23	No. 1 Wr'ght Scrap,	90c. cwt.
Kentucky	22@ 23	Heavy cast "	65c. "
Missouri	22@ 23	Light " "	40c. "
Georgia	22@ 23	Old rails	$19 00@$20 00
Alabama	22@ 23	Old carwheels	17 00@ 18 00

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal	$21 00	$20 00	$19 00	$17 00
" charcoal	20 00	19 00	18 00	.....
Tennessee charcoal	20 00	18 50	17 50	.....
Tenn. coke very soft and strong	20 00	19 00	17 00	16 00
Hanging Rock charcoal	22 00	20 00	19 00	.....
" " cold short	23 00	21 00	20 00	.....
	ExNo.1	No. 1.	BNo.1.	No. 2.
Alice Hanging Rock coke.	$22 00	$21 00	$19 50	$19 00
Moxahala Black Band ores	21 00	20 00	19 50	18 00

METALS.

NEW YORK, Friday Evening, Nov. 8, 1878.

The business of the week has been quiet, but there is shown an inclination to force up the prices of several of the articles.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING NOVEMBER 7TH AND YEAR FROM JANUARY 1ST, 1878.

	Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.	Year from Jan. 1
Copper, bbls	345	478	304	337	20,876
Copper, boxes	....	....	.....	.....	113
Copper, cakes	979	1,311	827	315	16,571
Lead, pigs	2,015	2,132	4,945	11,537	256,323
Spelter, pieces	....	4,146	774	249	39,896
Quicksilver, flasks	....	....	....	...	1,221

Gold Coin.—During the week under review, the

price of gold has ranged from 100¼ to 100⅛, and closed at 100⅛.

Copper.—The business has been confined to small lots at 15⅝@15¾c. The general asking price has been and is now 16c. There is nothing to indicate an early active demand.

Under date of London, October 21st, 1878, we receive the following:

"The market has been thoroughly disorganized, owing to the failure of Messrs. I. Sawers & Co., of Liverpool, which took place on Saturday last. The firm in question acted as agents for the banking-house of A. Edwards, of Valparaiso, whose large interest in this metal is well known to the trade. It is supposed that the stock held in England by I. S. & Co., on account of Mr. A. E., amounts to about 7000 tons (in bar ores and regulus) and no positive information has yet transpired as to whether any portion thereof will come on the market, although many rumors are current on the suuject. Notwithstanding the great wealth of the actual owners, it may possibly happen that they have not sufficient resources in this country, available at the moment, to take over so large a quantity and hence a chance arises that a portion of the stock may have to be sold; but, for our own part, we doubt this occurring to any important extent, and all statements to the contrary should be received with great reserve.

"On the day of the above failure, but prior to the fact becoming public, about 500 tons Chili bars were sold at £57 for good ordinary brands, and £58 for best marks, all on cash terms. In the afternoon prices suddenly gave way, owing to the reports of difficulties in the trade; dealers offering to sell G. O. Bs. at £56 for cash, but finding no takers, buyers, in fact, showing no disposition to operate. To-day a better feeling was apparent, and though £55 was accepted for a small parcel to arrive shortly by steamer, there were no further sellers thereat, and £56 is asked for cash.

"News has come from Australia of the closing of the Wallaroo mine, owing to the unprofitable state of the trade, and this brand is held for £67@£68; Burra being obtainable at £64@£65.

Tin.—On spot there has been a business of about 2000 slabs of Straits at 15¼@15½c.; of Australian to arrive in December, 25 tons at 13¾c.; of Straits, October and November shipments, 100 tons, at 13¾@14c. The price of Straits on spot at the close is 15⅝@15½c. with a strong upward tendency, while November and December shipments can still be purchased at 14c. L. and F. is quoted at 14¾c.; Refined, 15¼c.; and Banca, 18½c. By cable yesterday's London quotation for Straits was £60. This morning the price cabled was £61; while this afternoon further advices came of an advance to £62 10s. This is supposed to be the result of a strong speculative combination in the London market. The Singapore quotation is $18.25 and Penang, $17.60, with exchange at 3s. 10d.

Tin Plates have been quiet, and, although some sizes, through scarcity, have ranged higher, yet we do not change our quotations, which are as follows: Charcoal, bright, IX, Melyn grade, $5.87½@$6, and Allaway grade, $5.75@$5.87½; charcoal ternes, Allaway grade, $5.25@$5.37½; coke, bright, B. V. grade, $5, and roofing, 14 × 20, $4.70.

Messrs. Robt. Crooks & Co., of Liverpool, under date of October 24th, say of tin and terne plates: "Best coke tins are for the most part fairly well booked and firm, but with this exception market is weak. Buyers are evidently expecting lower prices for best-grade coke tins, and very little is doing at present quotations in this grade. For charcoal tins demand is exceedingly dull, while ternes, a few brands excepted, are drooping."

Lead.—The business of the week has been confined to small sales at 3·70@3·75c. The position of the market is unchanged.

Spelter and Zinc.—The business in spelter has been only in a small way at 4¾@5c. Sheet zinc is quiet, but lower. We quote at 5½c.

Antimony is quiet. We quote Cookson's at 12¼@12½c., and Hallett's at 12c.

Quicksilver.—The San Francisco *Commercial Herald* of October 24th says: "Last week we published the export statistics for the first nine months of the two past years, showing a very material falling off in the outward movement this year. The figures presented did not contain the overland movement by rail eastward, nor were we able to give the production of the several mines for the current year; but this we will do at some future period. At this writing the spot market is very dull and sluggish, and the price both low and nominal, say 40@41c. The readers of this paper know that the Sulphur Bank Quicksilver mine is one of the largest, most productive, and profitable of all the Quicksilver mines in the State. Last week there was what is feared an incendiary fire on the premises, and fearing, from the very erroneous and highly extravagant report thereof published in the Napa *Register* of the 26th inst., that many persons dealing in Quicksilver would think that the product of the mine would be greatly restricted, etc., we are authorized to say that the entire loss and damage was very trifling, and that not ten men were thrown out of employment by the fire, nor would there be any serious stoppage of the works; that prior to the fire instructions had been forwarded to the Superintendent to shut down for the winter that portion of the property destroyed. Here is the item referred to, which we clip from the *Register*: 'By telegram to the *Register* received on Saturday evening last, too late for publishing in the paper of that day, we learn that at six o'clock last Friday evening the buildings, refining machinery, etc., of the Sulphur Bank Mining Company, Lake County, were destroyed by fire. Their value is estimated at from thirty thousand to eighty thousand dollars. Sixty tons of sulphur were also burned. It is thought that it is the work of an incendiary. Ninety five white men and one hundred and five Chinamen are thrown out of employment by this disaster.'

"The quicksilver exports by sea for the past week are as follows:

	Flasks.	Value.
To Hong Kong, per steamer Belgic October 24th	2,205	81,294
To Mexican Ports, per steamer Newbern, October 26th	12	466
Totals	2,217	$81,760
Previously since January 1st	23,900	794,576
Totals since January 1st, 1878	26,117	$876,336
Totals same period 1877	41,318	1,495,300
Decrease this year	15,201	$618,964

"The receipts for the week amount to 932 flasks.

"Our exports by sea for October, 1877-8, are as follows:

	1877		1878	
To	Flasks.	Value.	Flasks.	Value.
China	705	$25,899	2,800	$101,346
Mexico	426	15,327	112	3,611
Japan	5	151	5	163
Central America	.....	.....	2	65
South America	600	20,844	.....	.....
Australia	65	2,385	.....	.....
New Zealand	5	190	.....	.....
Totals	1,806	$64,796	2,919	$105,215
Prev. since January 1st	39,512	1,394,504	23,198	771,121
Totals since January 1st	41,318	$1,459,300	26,117	$876,336

Bullion.—The market for silver has been somewhat inactive and nominal the past week, owing to the holidays in England at the close of last week, and our elections of this week, and remained nearly stationary at previous rates, until within two or three days, since when there has been a softening of the market to 50⅜d. in London, and 109½ here. The market is without indications of special importance, but may be considered firm but rather inanimate. The government bought more silver at its last purchase day, it is believed, than on the two previous ones, at rates which have not been made public, but believed to be at about the equivalent of 1 10 for fine.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

Date.	London Pence.	N. Y. Cents.	Date.	London Pence.	N. Y. Cents.
Nov. 2	50½	110	Nov. 6.	50⅜	109¾
Nov. 4	50½	110	Nov. 7.	50⅜	109½
Nov. 5	.....	Holiday	Nov. 8.	50⅜	109½

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of Nov. 2d:

October 21	Indian Queen	Nev.		$3,043.55
" 25	Tybo Con	"		7,377.14
" 25	Jefferson	"		5,103.74
" 26	Manhattan	"		12,000.00
" 26	Extra	"		4,740.00
" 26	Northern Belle	"		10,452.79
" 28	Independence	"		16,500.00
" 28	Hillside	"		5,802.50
" 28	Navajo	"		7,400.00
" 28	Oriental	"		2,848.25
" 22	Bodie	Cal.		*11,005.88
" 22	Standard	"		†17,117.77
" 28	Silver King	Ariz.		25,000.00
" 28	Christy	Utah		5,534.00
" 31	Butte	"		16,467.82
" 31	Silver Reef	"		24,891.00

* Product from 1st to 22d inclusive, $87,535.04.
† Product from 1st to 22d inclusive, $53,174.65.

The Crescent Mine at Leadville is yielding upward of twenty-five tons per day. The breast of the explorations shows bodies of ore ranging from four to six feet in width, which yields, as per mill run, from $150 to $250 per ton.

The Pacific Coast Bullion Product.—The San Francisco *Bulletin* gives the bullion product of forty-three mines for the month of September. Eighteen gold mines produced $722,200, the Bodie alone furnishing $250,000 of this. This shows a falling off of $400,000, as compared with August, due mainly to the decreased yield of Bodie, which for Augustwas given at $575,000. It is claimed that the correct figures were $601,000. The product of eighteen silver mines aggregated $600,600, the Ontario furnishing the largest contingent, $94,000. The product of the gold and silver mines, with the proportion of each metal produced was:

	Gold.	Silver.
California	$157,969	$132,969
Consolidated Virginia	133,127	125,965
Extra	4,650	18,556
Independence	3,633	36,777
Totals	$299,379	$314,267

The base metal mines, of which reports were received, produced as follows:

	Gold.	Silver.	Lead.
Eureka Consolidated	$112,858	$169,287	$69,640
New Coso		9,000	2,200
Tybo Consolidated	8,000	45,000	7,000
Totals	$120,858	$223,287	$78,640

Following is a recapitulation of the September product of the above mines:

Gold mines	$717,141	
Gold with silver	299,379	
Gold with lead	120,859	
Total gold	$1,137,378—	$1,137,378
Silver mines	600,600	
Silver with gold	319,126	
Silver with lead	223,280	
Total silver	$1,143,013—	$1,143,013
Value of lead	78,640—	78,640
Totals	$2,359,031	$2,359,031

The yield of silver for September is $20,000 in excess of August. The bullion yield of mines reporting for the first nine months of the current year has been as follows:

1878.	Mines.	Product.
January	28	$4,849,800
February	30	4,661,700
March	34	4,928,400
April	25	4,161,400
May	40	3,285,300
June	36	2,550,200
July	33	2,131,900
August	39	2,668,400
September	43	2,359,000
Total		$31,596,100

Over forty per cent of the above total represents gold, and the remainder is in silver, with the exception of $860,600 lead. The bullion for the last quarter, from an average of thirty-eight mines, was only $7,159,300, against $9,996,900 from an average of thirty-four mines for the previous quarter, and $14,439,900 for the first quarter from an average of thirty-one mines. Since the above was in type, the report of the McMillan mine, for September, has come to hand, and the amount is $12,273.

The Trade Dollar.—The Philadelphia *Ledger* says: "The trade dollar, which is such a nuisance in our domestic transactions, is nevertheless quite an important coin in the world's coinage. The Japanese government is about to change its *yen* or dollar to correspond to the American trade dollar in value, so as to circulate like that coin in China. The London *Economist* wishes that the British government 'had taken time by the forelock and coined a British trade dollar for circulation in the far East.' The coining of the American trade dollar made San Francisco the chief silver market of the world, enabling shipments to be sent from that point anywhere, of any amount, and in standard coin. English opinion sets more and more strongly in favor of efforts to restore the value of silver. The Pall Mall *Gazette* has taken up the cause of silver very urgently, and shows that the fall of silver increases the interest on British Indian loans nearly 50 per cent, and is a great loss to all who have remittances from India payable in silver, $15,000,000 a year at least. American travelers home from London represent the opinion at the Bank of England to be in favor of the early rise of silver, but this is probably based on news of the temporary cessation in the Nevada production, while a broader view forces the conclusion that the American silver resources are far from realized as yet."

Regarding the power of the Secretary of the Treasury to protect the country from the evil effects of the silver dollar the authority above quoted observes:

"We on Monday published a dispatch from Washington which furnishes an inkling of the way in which Mr. Sherman proposes, within the limits fixed by the law, to protect the country against the evil effects of the silver coinage. In the first place, he will enforce the provision which forbids the issue to national banks after the resumption of specie payments of notes of a lower denomination than five dollars. In the second place, he will probably retain the ones and twos of the greenbacks after January 1st, and, since the law compels the maximum amount of greenbacks to be kept out, will substitute larger notes for those retained. The influence of the restriction on the national banks will not be great, as the ones and twos of their issue are not in great demand, and do not at present amount to more than $6,000,000. But of the greenbacks there are about $49,500,000. Should these $55,500,000 of small notes gradually be replaced by silver dollars, there will, of course, be great inconvenience to the public, but the depreciation of the silver will be by that means for the time being kept in check. The New York *Times* thinks it probable that by the time the effect of this expedient is exhausted our representatives will have got nearly enough in sympathy with the wishes of their constituents to rid the country of the silver nuisance altogether."

Silver Coin in the Treasury.—The following is a statement of the standard silver dollars and subsidiary silver coin from the latest reports received at the United States Treasurer's office: Standard silver dollar coinage to date, $18,195,500; standard silver dollars on hand, $13,440,229; outstanding in circulation, $4,755,271; subsidiary silver coin coinage to date, $44,391,931; subsidiary silver coin on hand, $6,233,832; outstanding in circulation, $38,158,099.

The Latin Monetary Union.—PARIS, November 7.—At the Latin Union Monetary Conference, Italy agreed to abolish paper money for smaller amounts than five francs in order to relieve France of the glut of small coins driven here by the use of small notes in Italy. These small coins will not be received by the treasury of any other state after the end of this year, and Italy will take back those now on foreign soil. She has also agreed to restrict this year's coinage of five-franc pieces to twenty million francs, while the other powers have coined no silver this year, It is also further provided that the coinage of gold shall remain free, and that the coinage of silver, suspended indefinitely, can not be resumed without the consent of all the members of the Union. The convention requires ratification by the Chambers of the countries in the Union.

Resumption Prospects.—The Washington *Star* of November 5th says it can be stated on good authority that when the resumption of specie payments by the United States Treasury begins it will be a gold resumption, and not a silver resumption; although if the run on the Treasury for gold in exchange for United States notes should come close to the amount of that coin in possession of the government, it is stated that a retreat may be made to silver. The coin balance in the Treasury yesterday at the close of business was $228,526,453.28. Of this amount about $137,000,000 was gold available for resumption. There are outstanding about $326,000,000 in United States notes to be redeemed if presented. The plates for the $5000 and $10,000 greenback notes are nearly completed, and the notes will be ready for circulation by the day fixed for resumption. They are intended to do double duty—for convenience in handling large amounts, and to take the place of coin certificates. Their size will be the same as that of the rest of the greenback currency."

The figures given by the Secretary of the Treasury show how easily the resumption of specie payment can take place, and facts prove how readily it can be maintained, if there is no hostile legislation by Congress. In a hundred dollars' worth of business, taking the country through, about eight dollars in coin is used when business is in a normal condition, and there is no fear of monetary agitation. There is now, and there is every reason to believe there will be, coin enough upon which to maintain specie payments.

The Silver Bullion Offers.—WASHINGTON, November 7.—The opening of offers to the government of silver bullion yesterday afternoon was the most successful transaction

of the kind yet. There were a larger number of offers, and the Mint Bureau has purchased more bullion than at any previous opening. Between 500,000 and 600,000 ounces, to be delivered at the Philadelphia Mint, have been bought. Most of this amount was procured from New York bidders, although there were offers from nearly every bullion dealer on the Pacific coast. But, as at the previous opening of proposals, the rate at which bullion was offered is much lower than the London rate.

It is rumored that the price paid was from one quarter to one half cent below the London rate of 50¼d. per oz., or 110 57-100 per ounce in United States money.

Regarding these purchases the *Bulletin* of San Francisco says: "The number of parties in the United States who have silver to sell in any considerable quantity is not large. It were an easy matter for those sellers, on the day for receiving bids, to put the market up a fraction or two. It would have been quite as easy, and far more satisfactory, if the awarders had given the names of the successful bidders, the quantities purchased from each, and the price paid for the separate lots. We hope the suggestion will be adopted at the next public award. We are led to infer by the telegraph that there were about twenty bids from San Francisco. We do not know who they were. The leading bankers here who control the bulk of the silver product of Nevada, Utah, and Arizona, we are informed, did not forward any proposals. The small holders had no occasion to, as the Superintendent has authority to purchase up to 10,000 ounces without consultation with the Washington authorities. Just now there is no large amount of silver bullion in San Francisco, so far as we can learn, and we probably know as much about the condition of the market as any one else."

India on the Silver Question.—A cable from Calcutta reports that the government of India contemplate the adoption of a gold currency, making English gold coins a legal tender throughout the country. The importation of bar silver will probably be prohibited after a given time, and the rupee and smaller coins used as a fractional currency.

Coin and Bullion Exports and Imports.—The excess of imports over exports of gold and silver (coin and bullion) appears to have been as follows:

Month ended September 30th, 1877	$756,771
" " " 30th, 1878	923,703

The excess of exports over imports of gold and silver (coin and bullion) during the nine months ended September 30th, 1877, amounted to $24,706,780; but the excess of imports over exports of gold and silver (coin and bullion) during the nine months ended September 30th, 1878, amounted to $321,960.

The Per Capita Circulation of Leading Countries.—The population and per capita circulation of the four leading nations of the world at the latest dates, the amounts reduced to the currency of our own country, are thus stated:

Country.	Circulation.	Population.	Per capita.
France	$460,907,000	36,905,788	$12.48
United Kingdom.	213,905,000	33,474,000	6.39
Germany	148,015,000	42,727,360	3.46
United States	688,597,275	47,000,000	14.65

It will be seen that the aggregate, as well as the per capita, amount of paper circulation is larger in this country than in any of the other countries named, and largely in excess of any except that of France. In that country, however, the circulation has been reduced to the amount above stated since November, 1873, from $602,000,000, a reduction of $141,093,000; while, in the same period, the metallic reserve of the banks has increased from $146,000,000 to $435,000,000.

Movements of Silver in Great Britain.—The London *Economist* figures up the import and export movements of silver in Great Britain as follows:

IMPORTS.

	From Germany.	From United States.
1866 to 1875	$8,100,000	$163,000,000
1876	26,820,000	13,186,000
1877	68,737,000	13,079,000
1878 (eight months)	17,332,000	5,828,000
	$120,989,000	$195,093,000

	From Mexico, etc.	Total imports.
1866 to 1875	$175,500,000	$534,000,000
1876	15,396,000	67,891,000
1877	16,763,000	108,554,000
1878 (eight months)	12,683,000	42,607,000
	$220,342,000	$753,052,000

EXPORTS.

	To India.	To China.
1866 to 1875	$139,000,000	$26,500,000
1876	41,145,000	6,248,000
1877	71,568,000	10,238,000
1878 (eight months)	17,332,000	7,404,000
	$269,045,000	$50,390,000

	To France.	Total Exports.
1866 to 1875	$97,500,000	$471,500,000
1876	9,164,000	64,741,000
1877	3,837,000	77,183,000
1878 (eight months)	5,583,000	41,538,000
	$116,048,000	$654,962,000

RECAPITULATION.

Imports for the last 13 years 8 months	$753,052,000
Exports for same period	654,962,000
Excess of imports over exports	$98,090,000

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, Nov. 8, 1878.

While we can not advance the following quotations, yet the market is firm at these, and the least disposition for business would undoubtedly result in enhanced prices. *Argentiferous Lead (Base Bullion)*, $28 per ton for lead; $1.12 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

FINANCIAL.

New York Stocks.

NEW YORK, Friday Evening, Nov. 8, 1878.

The business of the week has been a limited one, and without special feature. Delaware and Hudson Canal has ranged from 44⅛@46, with sales of but 1245 shares. Delaware, Lackawanna, and Western has ranged from 49⅝ to 51¼, with sales of 48,851 shares. The aggregate of sales of New Jersey Central has been 1779 shares, at $29@$29¼.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 8th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

Stocks.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25			30	
St.L.,I.M.& S.R.Co.	100	12⅜	12	12	2,039
Spring Mt. Coal Co.	50			50	
*Cambria Iron Co.	50			58	
*Penn. Salt Mf'g Co.	50			67	154
*Westm'land C. Co.	50			50	
*Buck Mt. Coal Co.	50			38	
*Schuyl. Nav. Co.	50				
†B.&O.RR.Co.1st pf				96	
†B.&O.RR.Co.2d pf	100			85	
" " " com	90	81	80¼	80	81
†George's C'k C. Co	100			86½	
†S. Clara M'g Co.	100			25	
†Atlantic Coal Co.	10			90	

Bonds.	Princ'l. When Due.	Int'est. When Due.	High'st.	Lowest	Amount.
D., L. & W., 7s, conv	1892	J. & D.	103½		9,000
" " " " 2d mtge.	1881	M. & S.	104	103½	4,500
N.J.C.,1stmtge.new	1890	F. & A.	113⅝		1,000
" " " 1st mtge.,con	1899	Q.	70½	68¾	*15,000
" " " convt.	1902	M. & N.	82½		10,000
Lehigh & W. B., con	1899	Q.	58	55½	†22,000
Am. Dock & Imp. 7s		J. & J.		54	
St.L.I.M.& S..1st mt	1892	F. & A.	107		7,000
Ches. & O., 1st mtge	1899	M. & N.		27	
D & H C Co.,1stm.rg	1884	J. & J.		97	
" " " " " "	1891	J. & J.	97		2,000
" " " " m.loan cp	1894	A. & O.		96	
" " " " " rg.	1894	A. & O.			
" " " " new mge.					
*L.V.R.,1stm.6s.cp.	1898	J. & D.		112	
" " " " rg.	1898	J. & D.	113		2,000
" " " 2d m. 7s,rg.	1910	M. & S.		116	
" " " con.m.6s,rg	1823	J. & D.	102		1,000
" " " 6s cp.	1923	J. & D.		102	
*Pa.RR.,1st m.6s,cp	1880	J. & J.	105½	105¼	5,000
" " g. m., 6s, cp.	1910	J. & J.	110	109⅛	4,000
" " " 6s, rg.	1910	A. & O.	108¾	108½	8,000
" " con.m.6s,rg.	1905	Q.		97½	
" " " 6s, cp.	1905	J. & D.		98	
" " new loan, 5s			111¼		7,100
*P.& R. R., 1st m.6s, R. C. 43-44	1880	J. & J.		104½	
P. & R. R., 1st m. 6s, R. C. 48-49	1880	J. & J			
P.& R. R.,2d m.7s cp	1893	A. & O.		109	
" " " scrip.	1882	J. & J.		53	
" " " in.m.7s,cp	1896	J. & D.			
" " " c.m.7s,cp.	1911	J. & D.	101	100½	24,000
" " " " 7s. rg.	1911	J. & D.	100½		2,000
" " " cvt.7s,R.C	1893	J. & J.			
" " C.& I.Co.,Deb 7s, R. C.	1892	M. & S.			
& R.C.& I. Co., m. 7s, R. C.	'92-3	various			
L. Nav. Co.,6s,rg.m.	1884	J. & D.	104½		2,900
" " RR., rg. m.	1897	F. & A.		104½	
" " cvt. co. G. R.	1894	M. & S.			
" " " Gold R. C.	1897	J. & D.	95	94¾	12,500
" " con.m.7s,rg.	1911	J. & D.		65	
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.			
*Pa Canal, 6s. cp.	1910	J. & J.	65		6,000
*Schuyl.Nav.,1st m. 6s. rg	1897	M. & S.		88	
*Sus.Coal, 6s, rg	1911	J. & J.			
†Balt.&O. RR., 6s.	1880	J. & J.	102¾		3,000
" " " " 6s.	1885	A. & O.	105		3,500

Total transactions for the week.....$151,500

* Assented. † 5000 assented; sold at 39.

Philadelphia Stocks.

PHILADELPHIA, Friday Evening, Nov. 8, 1878.

The elections this week have had the effect of reducing the transactions in stocks in this market. As no new developments have been made in the coal trade, the coal stocks have shown but small fluctuations. The dealings have been as follows: Lehigh Coal and Navigation Company, 471 shares, at $16⅝@$16; Lehigh Valley Railroad, 206, at $37¼@$37¾; Pennsylvania Railroad, 39,424, at $33⅜@$32½; and Philadelphia and Reading Railroad, 12,983, at $13⅝@$13¼.

COAL STOCKS.

Name of Company.	Capital Stock.	Shares. No.	Shares. Par Val.	Last Dividend. Mo.	Last Dividend. Y.	Last Dividend. A't.	Rate per Ann.	Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share. Nov. 2. H.	Nov. 2. L.	Nov. 4. H.	Nov. 4. L.	Nov. 5. H.	Nov. 5. L.	Nov. 6. H.	Nov. 6. L.	Nov. 7. H.	Nov. 7. L.	Nov. 8. H.	Nov. 8. L.	Sales.
	$		$				Per c'nt													
Consol. Coal.	10,250,000	102,500	100	Jan.	77	2½														
Del. & H. C.	20,000,000	200,000	100	Aug	76	4	8	45	44½	45¾	45½					46	46	45½	45	1,245
D., L.& W. RR.	26,200,000	524,000	50	July	76	2½	5	50¼	49⅝	51⅛	49¾			51	50¼	51¼	50⅝	51⅛	50⅝	48,851
Lehigh C.& N	10,448,550	208,971	50	Nov	76	1½	5½	16¼	16⅛	16¼	16¼			16¼	16¼	16⅛	16⅛	16¼	16⅛	471
Leh. V'y R. R	27,228,855	540,858	50	July	78	1		37⅜	37¼	37⅜	37⅜			37½	37½	37⅜	37¼	37⅜	37⅜	206
Maryl'd Coal	4,400,000	44,000	100	Jan.	76	1½	1½													
N. J. C. R. R.	20,600,000	206,000	100	Apr	76	2½	2½	29¼	29	29½	29⅛			29⅛	29⅛	29¼	29¼	29¼	29¼	1,779
Penn. Coal	5,000,000	100,000	50	May	78	3														
Penn. R. R.	68,870,200	1,337,404	50	May	77	1½	8	33⅜	33	33	32½			32⅞	32¾	33	32⅜	33	32⅞	39,424
Ph. & R. R. R	34,278,175	685,563	50	Jan	76	+2½	10	13⅜	13¼	13⅜	13⅜			13⅝	13⅜	13½	13¼	13⅜	13¼	12,983

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497.

Total Sales.....104,959.

Gas Stocks.

NEW YORK, Friday Evening, Nov. 8, 1878.

Gas stocks continue very dull, and we have no important change to note. We lower the quotations of the Municipal of New York, as also those of the Jersey City Company.

Gas Stocks in Great Britain.—The *Commercial and Financial Chronicle* of the 2d inst. says regarding the recent remarkable decline in English gas securities: "The movements in gas securities during the past eighteen months in Great Britain have been very similar to movements in the same class of stocks in this country. Rather more than a year ago lighting by electricity first began to have an important influence upon the prices of these securities in England. Previous to that time prices there had reached a very high level, and the rate of interest realized by investors scarcely exceeded 4½ or 4¾ per cent. A sudden pressure upon the market, amounting to almost a panic, then ensued, owing to the attempts of holders to realize on these securities to an extent which the market, being non-speculative, was unable to absorb. Prices, in consequence, fell from 15 to 20 per cent, and, although there was afterwards a momentary rally, a declining tendency prevailed until about three months ago, when another severe relapse took place. Since then they have been very depressed, and, with the slightest pressure to sell, prices have at once given way sharply. Within a month, moreover, advices from the United States, with regard to the improvements effected in the electric light, by which it could be utilized for domestic purposes as well as on a large scale, have again alarmed investors, and the attempts to realize have not only produced a further very serious fall in prices, but have, in fact, rendered some issues almost unsalable. Thus, within the short space of less than two years, there have been three successive panics, during each of which prices have fallen from 15 to 20 per cent, so that, compared with the highest points touched in 1877, there is a fall of from 50 to 60 per cent, as may be seen from the following, showing the capitals of the more important undertakings in Great Britain, and, also, the highest prices touched in 1877, compared with the prices at the commencement of the year, and closing quotations of October 11th, 1878:

	Total capital.	Total amount.	Amount of share.	Prices. Highest, 1877.	Prices. January 1, 1878.	Prices. October 11, 1878.	Fall, compared with 1877.
Commercial	£635,000	£350,000	£100	215	186	160	55
Continental Union	1,024,500	400,000	20	23	20	15	8
European	638,000	234,060	10	19	18	15	4
Gas-Light and Coke	8,101,500	4,094,840	100	224	186	160	64
10 per cent preferential		665,000	100	235	205	193	42
H 7 per cents		1,300,000	100	155	137	115	40
Imperial Continental	2,800,000	2,800,000	100	220	182	155	65
London	866,000	386,500	100	216	186	160	56
1st preference		150,000	100	143	133	115	28
Phœnix		540,000	20	45	38	33	12
Capitalized	2,014,378	144,000	100	108	103	95	13
7½ per cent new max		288,000	50	137	128	110	27
South Metropolitan	480,000	200,000	50	112	110	92	20
Surrey Consumers	290,000	150,000	10	22	18	15	7

Novel Application of the Electric Light.—The electric light has been successfully applied to the bicycle by an enthusiastic Englishman. The motor is the hind wheel of the bicycle, and the apparatus is a small ordinary magneto-electric machine with rotary magnet, aided by a small pocket-battery. The carbons are regulated by a train of wheels, worked by the front wheel of the bicycle, the consumption being about one inch per hour. The apparatus takes up the room of a small valise, and costs in all about $25. The light is steady, and equal to 120 candles, its great advantage being that it lights up the road thoroughly for 200 yards ahead on a dark night. Carriage-makers and owners may find a useful hint here.

GENERAL MINING STOCKS.

Dividend Paying Mines.

Name and Location of Company.		Feet on Vein.	Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total levied to date.	Assessments. Date and amount per share of last.	Dividends. Total paid to date.	Dividends. Last Dividend.	Rate p. An	Highest and Lowest Prices per Share in Currency at which Sales were Made. Nov. 2. H.	Nov. 2. L.	Nov. 4. H.	Nov. 4. L.	Nov. 5. H.	Nov. 5. L.	Nov. 6. H.	Nov. 6. L.	Nov. 7. H.	Nov. 7. L.	Nov. 8. H.	Nov. 8. L.	Sales.
Alps	Nev.	800		30,000		204,000	Sept. 1878 $1 00	37,500	Apr. 1876	$0 50													
American	Col.		1,000,000	100,000	10	*		80,000	Sept. 1878	0 10 12													
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,392,200	Oct.. 1878 1 00	15,397,200	Apr. 1876	1 00 12													
Bobtail, g.	Col.	2,500	1,138,630	227,326	5	*		56,831	Nov. 1877	25													
Bobtail Tunnel, g.	Col.		100,000	20,000	5	52,000	July 1873 0 30	48,000	June 1878	50													
Bodie, g.	Cal.		5,000,000	50,000	100	25,000	Feb. 1878	650,000	Oct. 1878	2 00 20	21⅛												20
California, g. s.	Nev.	600	54,000,000	540,000	100			29,160,000	Aug. 1878	1 00 24									12½	12⅛	12⅜		37
Calumet & Hecla, c.	Mch		2,000,000	80,000	25	1,200,000		13,450,000	Aug. 1878	5 00 20			172	168			169	168	165⅛	158¼			311
Central, c.	Mch		500,000	20,000	25	100,000	June 1862 0 65	1,260,000	Feb. 1878	5 00													
Chollar Potosi, g. s.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept. 1878 5 00	3,040,000	Feb. 1872	1 00													
Copper Falls, c.	Mch		1,000,000	20,000	50	535,000	May. 1876	100,000	Nov. 1871	1 00			1¼										300
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June 1873 3 00	40,500,000	June 1878	1 00 12			12⅜				13	12¼	14	13⅜	14	13	490
Confidence, g. s.	Nev.	130	2,496,000	24,960	100	256,320	Apr. 1878 0 50	78,000	May. 1865	8½ 8½													
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*		120,000															
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	1,873,370	Sept. 1878 1 00	11,588,000	Jan.. 1875	2 00 24													
Daney	Nev.	2,000		108,000		70,200	July 1877 0 20	56,000	July 1863	1 10½													
Eureka Cons., g. s. l.	Nev.		5,000,000	50,000	100	100,000	1876 1 00	2,950,000	Aug. 1878	3 00 24													
Eureka G. Mg., g.	Cal.	1,680	2,000,000	20,000	100			2,149,000	Apr. 1878	0 25													
Franklin, c.	Mch		500,000	20,000	25	360,000	June 1876 5 00	585,000	Nov. 1871	1 00													
Gila	Ariz			100,000		50,000	Apr. 1878 0 25	50,000	Aug. 1875	0 25													
Gould &Curry, g. s.	Nev.	612	10,800,000	108,000	100	2,666,000	Apr.. 1878 1 00	3,826,800	Oct. 1870	10 00													
Grand Prize	Nev.	1,500		100,000		100,000	July. 1878 1 00	400,000	Feb. 1878	1 00													
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	2,914,000	Aug 1878 1 00	1,598,000	Apr. 1871	5 00 12													
Hukill, g. s.	Col.	3,288	1,000,000	100,000	10	*		200,000	Nov. 1878	0 10 12	4¼										4.20	4.15	600
Independence	Nev.	1,500		100,000		55,000	Feb.. 1878 15	15,000	Aug. 1878	25	2.90	2¾	2.90	2¾			2¾	2.70	2¾		2.60	2½	2,245
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	300,000	Aug. 1878 1 00	1,252,000	Mar. 1870	5 00													
K. K. Cons.	Nev.			50,000		200,000	Sept. 1878 1 00	50,000	Sept. 1873	0 25													
Leeds	Uth.	3,000		60,000				69,000	Sept. 1878	0 15			2¼	2							2.10	2	290
Leopard, L. g. s.	Nev.	1,500	5,000,000	50,000	100	175,000	Oct.. 1878 50	162,500	Dec. 1876	0 50													
Manhattan	Nev.			50,000		50,000	Oct.. 1878 1 00	400,000	Feb. 1877	1 00													
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*	June	120,000	Mar.	12													
Minesota, c.	Mch.		1,000,000	20,000	50	436,000	1869 1 00	1,820,000	Mar. 1876	0 50													
Modoc	Cal.	4,000		100,000		350,000	Sept. 1878 0 50	50,000	Dec. 1876	0 50													
Moose	Col.	39,000	2,000,000	200,000	10	*		550,000	Mar. 1878	0 25 10			4½				4.60	4.40					900
National, c.	Mch.		500,000	20,000	25	195,000	Oct.. 1875 1 00	360,000	Oct. 1873	1 00													
N. Y. & Colorado, g.	Col.		1,000,000	50,000	20	*		20,000	Mar. 1877	0 20													
Northern Belle, s.	Nev.	1,600	5,000,000	50,000	100			1,425,000	Feb. 1878	1 00	1.65	1½	1½				1.40	1¼	1.45	1.35	1.45	1.40	2,845
Ontario.	Uth.	3,000	10,000,000	100,000	100			1,850,000	Nov. 1878	50 12	35	34¼	37	35			38		38½		39½	39	743
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,336,000	Sept. 1878 1 00	1,394,400	Mar. 1864	4 00													
Pewabic, c.	Mch.		500,000	20,000	25	185,000	June 1868 3 00	460,000	July 1873	1 00													
Phœnix, c.	Mch.		1,000,000	20,000	50	817,500	Sept. 1870 3 00	20,000	Jan. 1876	1 00													
Plumas	Cal.		1,000,000	100,000	10			90,000	Nov. 1878	10	3.95	3.90	4.05	3.95			4	3.90	3.90		3.95		1,350
Polar Star, g. s.	Col.	1,300	500,000	50,000	10	*		5,000	Jan. 1878	0 10													
Quincy, c.	Mch.		200,000	20,000	10			2,230,000	Feb. 1878	5 00									11¼	11			142
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	630,000	Oct.. 1878 1 00	3,075,000	Sept. 1873	3 00													
Ridge, c.	Mch.		500,000	20,000	25	200,000		90,000	Feb. 1875	1 00													
Rye Patch	Nev.	1,600		30,000		97,500	Nov. 1876 0 50	105,000	Dec. 1877	0 25													
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10			250,000															
Savage, g. s.	Nev.	800	11,200,000	112,000	100	3,972,500	Sept. 1878 1 00	4,460,000	June 1869	3 00													
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*		10,000	May 1877	0 10 12													
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	2,350,000	Oct.. 1878 3 00	102,000	Jan. 1871	1 00 10													
Silver King								450,000	Nov. 1878	0 50													
Standard	Cal.			50,000		50,000	July 1878 1 00	450,000	Aug. 1878	1 00													
Tip Top	Ariz	1,500		100,000		120,000	Aug. 1878 50																
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120,000	100	3,798,000	Sept. 1878 1 00	2,184,000	Aug. 1871	2 50													
McClinton	Cal.	1,000		0,000																			

Non-Dividend Mines.

Allouez, c.	Mch.		1,000,000	20,000	50	940,000	May 1876 5 00																
Alpha, g. s.	Nev.	300	3,000,000	3,000	100	240,000	Mar. 1878 1 00																
Alta	Nev.	600		100,000		885,000	July 1878 1 00																
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*													25c	24c			300
Andes	Nev.	2,000		100,000		355,000	Oct.. 1878 0 25																
Baltimore Cons.	Nev.	1,050		84,000		1,015,000	Apr. 1878 0 50																
Benton	Nev.	600		108,000		37,800	Aug. 1878 0 35																
Bechtel	Cal.			60,000		60,000	Aug. 1878 0 50																
Bertha & Edith. g.	Vir.	645 acs.	3,500,000	350,000	10	*																	
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	438,590	Apr. 1878 1 00						7c	6c			7c		8c	7c	10c	8c	35,700
Boyle	Nev.	600		108,000		16,240	Aug. 1878 0 15																
Buckeye	Col.		2,000,000	400,000	5	*					57c	.	57c				58c						1,200
Bullion, g. s.	Nev.	943⅛	10,000,000	100,000	100	2,952,000	Aug. 1878 1 50																
Caledonia, g. s.	Nev.	2,188	10,000,000	100,000	100	1,490,000	Sept. 1878 0 50																
Cashier	Col.		500,000	250,000	2	*																	
Challenge	Nev.	90		50,000																			
Cleveland, g	Col.	3,715	250,000	25,000	10	*																	
Cons. Imperial, g. s.	Nev.	468	50,000,000	500,000	100	775,000	Sept. 1878 0 20																
Con. N. Slope & E. C.T.	Col.	15,000	500,000	10,000	50	*																	
Dahlonega	Ga.		250,000	250,000	1	*					18c		13c	17c			18c	17c	18c	17c	19c	17c	16,100
Dana, c.	Mch.		500,000	20,000	25	68,000	Jan.. 1863 0 50																
Dawson, s.	Ont.		1,200,000	60,000	20		1878																
Day	Nev.	1,500		100,000		55,000	Sept. 1878 0 25																
Dayton	Nev.	1,600		100,000		750,000	Apr. 1878 0 25																
De Frees	Ariz	1,500		100,000		115,000	Oct.. 1878 15																
Duncan, s.	Ont.		1,200,000	60,000	20	75,000	July 1876 41⅔						5	4½			6½	5c	5½	5½			2,240
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	380,000	Jan.. 1878 1 00																
Findley, G.	Geo.		200,000	200,000	1						64c	62c	65c	63c			62c	61c	62c		62c		7,800
Gold Placer, g.	Col.		5,000,000	200,000	25						33c	29c	31c	28c			34c	30c	35c	32c	32c	29c	38,400
Granville, g.	N. C.	357 acs.	1,000,000	100,000	10	*	0 50																
Humboldt, c.	Mch.		500,000	20,000	25	100,000	Sept 1878 0 15																
Hussey	Nev.	4,500		100,000		95,000	Oct.. 1876 0 25																
International, s.	Ont.		1,200,000	60,000	20								80c						60c				500
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	635,000	Sept. 1878 1 00										60c	50c	57½c				600
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,658,500	Aug. 1878 1 05																
King's Mountain, g.	N. C.		1,200,000	120,000	10	*	1877																
Kossuth	Nev.	2,700		108,000		421,200	Aug. 0 15																
Lacrosse	Col.	3,900	1,000,000	100,000	10	*					48c	46c	48c	40c			43c	40c	43c	41c	42c	39c	82,400
Leviathan	Nev.	2,000		100,000		240,000	May. 1878 05																
Luzerne	Col.	4,200	5,000,000	500,000	10	*																	
Madison, c.	Mch.		500,000	20,000	25	123,000	Sept 1876 0 10																
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June 1877 1 00												2½		3		200
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June 1878 1 00																
McCracken	Ariz	4,500		100,000		100,000	Oct . 1878 0 50																
Martin White	Nev.			100,000		500,000	July 1877 1 00																
Memphis	Col.	6,000	300,000	60,000	5	*	0 50																
Mesnard, c.	Mch.		500,000	20,000	25	160,000	Apr. 1876 0 50																
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	217,400	May. 1878																
Minnietta Belle	Cal.	1,500		100,000		75,000	Apr. 1878 0 50																
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*	1878																
Navajo		1,500		100,000		125,000	May. 1878 0 25																
New York	Nev.	1,000		100,000		730,000	Aug. 1878 0 30																
Occidental	Nev.	1,706		40,000		72,500	Feb. 1877 0 25																
Orig. Keystone	Nev.	1,500					Oct. 1878 0 50																
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Sept. 1878 3 00																
Osceola, c.	Mch.		1,000,000	40,000	25	2,567,880	Nov. 1877 3 00																
Petherick, c.	Mch.		500,000	20,000	100	165,533	Mar. 1876 0 50										11						10
Pleasant View, g.	Col.	1,200	200,000	20,000	10	*																	
Quicksilver preferred	Cal.	8,500	4,291,300			*																	
" common	Cal.	acres.	5,708,700	100,000	100								13	12					10¾				260
Rockland, c.	Mch		500,000	20,000	25	495,000	Jan.. 1874 1 00																
Sag. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr. 1876 5 00																
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,296,000	Sept. 1878 0 50																
Silver Prize	Nev.	1,500		100,000		25,000	May. 1878 0 15																
Star, c.	Mch.		500,000	20,000	25	265,000	Mar. 1876 0 50																
Superior, c	Mch.		500,000	20,000	25	340,000	Mar. 1878 0 25																
Tioga	Cal.	1,500		100,000		20,000	Oct. 1878 0 20																
Trojan	Nev.	1,500		100,000		240,000	Oct. 1878 0 25																
Union Cons. g. s.	Nev.	850	10,000,000	100,000	100	310,000	Apr.. 1874 0 25																
Utah	Nev.	1,000		20,000		680,000	Oct . 1878 1 00																
Ward	Nev.	1,200		110,000		66,000	Sept 1878 0 30																
Wells Fargo	Nev.	1,500		108,000		216,000	Sept 1878 0 50																

Total Assessment levied to date $57,215,913

g. Gold. s. Silver. L. Lead. c. Copper. * Non-Assessable.

Total Dividends paid to date..... $150,939,231

Total Sales for the week..... 196,383.

The Spread of the Electric Light in Europe.—We note the statement that the London Metropolitan Board have concluded to put electric lights along the whole length of the Victoria embankment, a mile and a quarter. For this entire distance only twenty Jablochkoff candles will be needed, and these can be supplied by one engine of twenty-five horse-power. The owners of the Jablochkoff patent (a favorite in Paris) are so confident of the success of this grand experiment that they agree to furnish the lights for three months for the bare expenses of working them. This offer would involve those making it in a loss if they did not feel sure of throwing gas-light metaphorically and literally into the shade. Another step in the progress of the electric light abroad is its permanent adoption as a substitute for gas in the press-room of the London *Times*.

The *Electrician* learns from St, Petersburg that preparations are in progress for illuminating the streets of the Russian capital by means of Jablochkoff's electric light.

The Public Lighting of Cincinnati.—This city has appropriated $117,000 for lighting purposes for the six months ending December 31st, 1878.

Halifax (N. S.) Gas Co.—We note a recent quotation of the stock of this company, par $40, at $145 per share.

San Francisco Gas Co.—We note recent sales of some 600 shares of the stock of this company at from 88 to 89.

MISCELLANEOUS SALES:

Baltimore Gas Co.—27 shares, at from 98@97; also, $7000 of the company's bonds, at 95¼@95 per cent.

People's Gas Co., of Baltimore.—16 shares, at 11½ per cent.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	Am. of last.	Date of last.	QUOTATI'NS Bid.	As'd.
	$		P. ct.				
Mutual, N. Y.	5,000,000	$100	6	1½	Oct., '78	50	62
" Bonds	90,000	1,000	6	3½	Aug., '78	95	103
N. York "	4,000,000	.....	8	4	May, '78	75	85
Metrop. "	2,500,000	100	10	5	Aug., '78	100	110
" Certfs.	1,000,000	.....	7	3½	" '78	95	98
Harlem "	1,850,000	50	6	3	Feb., '78	35	40
Manhat. "	4,000,000	50	....‡	5	May '78	145	155
Brooklyn, Bkln.	2,000,000	50	15	5	Apr., '78	110	120
Nassau "	1,000,000	25	....‡	3	July, '78	50	56
" Certfs.	700,000	1,000	7	3½	May, '78	80	86
People's	1,000,000	10	....‡	3½	Jan., '76	16	22
" Certfs.	300,000	1,000	7	3½	July, '78	75	90
" Bonds	325,000	.....	7	3½	May, '78	90	96½
Metrop. "	1,000,000	100	5	2½	May, '78	50	60
W'msb'g "	1,000,000	50	8	1½	July, '78	.....	90
" Certfs.	1,000,000	.....	7	3½	July, '78	.....	98
Citizens'	1,200,000	20	....‡	3	July, '78	55	65
" Certfs.	320,000	1,000	7	3½	Apr '78	90	98
J. C., N. J.	750,000	20	10	7½	July, '78	130	150
Municipal, N. Y.	466,000	50	.....	.....	.....	80	85
" Bonds	750,000	.....	.....	.....	.....	.....	...
.....	.....	.....	.....	.....	.....	.....	...

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Nov. 7, 1878.

There have been some very notable changes the past week in the state of the market, the principal events being the large decline in some of the "coppers," and the advance in the "silvers."

No reason has as yet been discovered for the sudden decline in the "coppers," although it has been predicted here, for the past two months, by some of the best judges of the market, that Calumet and Hecla was selling for more than it was worth, and would sell lower before long, and it is to be supposed that the drop in this stock had the effect of weakening the others, and, as a consequence, the whole market fell off, and closed weak.

Calumet and Hecla sold down to 165 and closes very weak at 165@166, and will undoubtedly sell lower. It looks as though the bubble, which has been inflated so long, had suddenly burst, and stockholders are using their best endeavors to get out of the reach of the collapse.

Copper Falls is weak, closing 1@1¼.

Allouez is 2¾ bid, and no stock offering.

Franklin is also weak, closing 4¾@5¼, and no sales.

Osceola is rather soft, at 10¼@11, and sales at 11.

Pewabic is unchanged, at 1@1½.

Quincy closes lower, there being sales at 11, and stock offered at that figure, and 10¼ bid.

Ridge sold down to 1, and closes steady, at ⅞@1.

Duncan has taken the jump we have been predicting for it all along, and sold up to 6⅞, but sold down again to 5, and closes firm, at 5¼@5¼, and will probably go higher.

International is following out the course we marked out for it by proving itself to have been a good purchase at 50c., and closes 60@65c.

Silver Islet closes 41@43, and sales at 42.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Nov. 8, 1878.

The advent of election day, besides limiting the business of the week under review to five days, drew attention from the Exchange for a day or two following. The aggregate of transactions, however, is a fair one. The dealings, have been without special feature.

San Francisco stocks have received the usual proportion of attention. We note the following sales: Bodie, 20 shares, at $21½; California, 37 shares, at $12⅛@$12½; Consolidated Virginia, 490, at $12¼@$14; Independence, 2245, at $2.90@$2.50; Leeds, 290, at $2.25@$2.00; Hussey, 500, at 80c.

In the more important stocks of the regular list we notice the following transactions; Hukill, 600 shares, at $4.25@$4.15; Moose, 900, at $4.60@$4.40; Plumas, 1850, at $4.05@$3.90; Seaton, 300 shares, at 80@70c.

There has been a very fair business done in the low-priced fancies. The sales of American Flag have aggregated but 300 shares, at 24@25c. This business was done yesterday, and was probably a "wash." Bertha and Edith, with a business of 35,700 shares, has ranged from 6@10c. per share. Buckeye has done a scattered business, amounting to but 1200 shares, at 57@58c. Dahlonega has ranged from 17@19c., with sales of 16,100 shares. Findley is securing considerable *bona-fide* attention; the sales at the Exchange aggregate 7800 shares, at 65@61c. Late reports from this mine are of a very favorable character. Gold Placer has been dealt in to the extent of 38,400 shares, at 34@29c. Lacrosse records sales of 82,400 shares, at 48@39c.

There are rumors that the stocks of the Sutro Tunnel Co. and the Sierra Nevada mine are to be listed in this market, the latter at the regular Stock Exchange, where probably the former would be also.

The Plumas, Hukill, and Ontario companies announce their dividends.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS Nov. 1.	Nov. 2.	Nov. 4.	Nov. 5.	Nov. 6.	Nov. 7.	Opening. Nov. 8.
Alpha	14⅝	15	15¼	14	14¼	15¼	14¼
Alta	14	13	13⅜	13	13½	13⅜	13½
Argenta	.....	7¼	7½	.....	7½	7½	6⅞
Bechtel	.....	1	1	.....	1	¾	¾
Belcher	8⅞	8¾	8⅝	8½	8	8¼	8
Belle Isle	.....	1½	½	.....	½	½	½
Benton	.....	7½	6½	.....	6½	7	7
Best & Bel	25	24½	24¾	23⅝	24½	25¾	25
BlackHawk	.....	1¼	1¼	.....	1¼	1	1
Bodie	19½	19	17¾	18	18½	17¾	18
Booker	.....	2	1¾	.....	1¼	1¾	1¼
Bullion	14	13¾	13½	12¼	12¾	13½	13½
Bulwer	.....	.....	.....	.....	.....	.....	14½
Caledonia	4⅞	5⅛	5⅛	4¾	4¾	4¾	4¾
California	11¾	12	11¾	11½	12¼	12⅝	12⅜
Challar-Pot	61	60	59	60	59	59	59
Confidence	10½	11½	11	11	11	11¼	.....
Con. Imp	.....	.....	.....	.....	.....	.....	1
Con. Va	12	12½	12⅛	12¼	13⅜	13½	13
Crown P'int	10½	10¼	10¼	9⅝	10⅛	10¼	10
Endowm'nt	.....	85	85	.....	60	60	60c.
Eureka Con	34¼	33½	33¾	34	35	36¾	36
Exchequer	6¼	6½	6¼	6¾	6¾	7¼	7
Goodshaw	.....	.....	60	.....	60	60	60c.
Gould &Cur	17¾	17¾	18	17	17⅝	18⅛	18
Grand Prize	7	7	8¼	8¼	8¼	8	8⅛
Hale & Nor.	23¾	24	23½	22½	22	22¾	23
Hamburg	.....	.....	.....	.....	.....	.....	21½
Homestake	.....	10	10	.....	10	10	10½
Hussey	.....	60	60	.....	60	60	60c.
Indep'd'nce	.....	2½	2¼	.....	2½	2¼	2¼
Jackson	.....	8	.....	.....	.....	.....	.....
Julia Con	6¼	6	5⅝	5¼	5¼	5½	6
Justice	8⅝	8¾	8¾	8¼	8½	8½	8¼
Kentuck	7½	7½	8¼	7⅞	8	7⅞	7⅞
Kossuth	.....	30	30	.....	30	30	30
Leopard	.....	¾	¾	.....	¾	¾	¾
Leviathan	.....	90	90	.....	90	90	90c.
Manhattan	.....	.....	.....	.....	.....	.....	3½
McClinton	.....	¾	¾	.....	¾	¾	¾
MeadowVal	.....	.....	.....	.....	.....	.....	1¼
Mexican	72	73	72¾	69¾	71	73¾	73½
Mono	.....	5	5	.....	5	5¼	5¼
Navajo	.....	¾	¾	.....	¾	¾	¾
North. Belle	.....	10½	10½	10¼	10¼	10¼	10½
Ophir	55	56	55¾	53¼	54	56¾	57
Orig. K'ys'e	.....	7	7	.....	7	7	7
Overman	27½	27½	27	24½	25½	26	24
P. Sheridan	.....	1	1¼	.....	1¼	2¾	2¾
Ray. & Ely	7	7½	11	10½	9½	8½	8
Richer	.....	1½	1½	.....	1	1½	2
Savage	22¼	22¼	20½	19¼	20	20⅝	20
Scorpion	4¾	.....	.....	.....	3¼	2¾	2
Seg.Belcher	35	.....	.....	.....	.....	.....	35
Sierra Nev.	189	195	190	183	185	196	*
Silver Hill	3¼	3	3⅛	2¼	2¾	2¾	3
Silver King	.....	.....	.....	.....	.....	.....	15
Summit	.....	1¼	1	.....	1	1	1
Tioga	.....	2½	2	.....	1¾	2	.....
Tip Top	.....	1¼	1¼	.....	1¼	1¼	1½
Union Con.	158	157	151	148	153	159	†
Utah	38	42	42	37	39½	42½	42½
Ward	.....	1	1½	.....	1	1	1
WashoeCon	.....	.....	.....	.....	.....	.....	1
Wells Fargo	.....	65	85	.....	85	.....	85c.
Yel. Jacket	24½	.....	20¾	22¾	23½	24⅝	24
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....

*192@189. †157@154.

The course of the above list during the operations of the past week has shown a better feeling than existed during the business of the week previous. We note advances in many of the stocks, principally, however, of the Comstocks, which we presume are mainly due to the gradually-enhanced quotations of the new bonanzas. Alpha shows rather a weakening in price. The mine is looking well, and explorations on the 2400-foot level are progressing satisfactorily. Operations are being vigorously prosecuted in the Argenta. Recent advices from the mine state that it is expected to immediately connect with the 250-foot level of the Grand Prize. Belle Isle shows no change in price. The appearance of the mine shows a continued improvement. Work is being done on the north drift from the 150-foot level. Best & Belcher stock is strong, and the news from the mine indicates that active operations are in progress in all parts of it. The stock of the Bodie Company is lower. The yield of ore from the Burgess ledge is lessening without any deterioration in quality. In other parts of the mine the ore is of a fair quality, and the output of the mine is now equal to about $150,000 per month. The Black Hawk Mining Co. held its annual meeting recently, showing its operations for the year ending September 30th, the total expenses for the year amounting to about $25,000, principally in wages and salaries. The mine is developed by a two-compartment shaft to the depth of 300 feet, from which drifts have been run with favorable indications. 150 tons of ore were stoped out and run at a custom mill, showing a working average of nearly $15 per ton. The old bonanzas show an improvement. The yield from both mines reaches nearly 500 tons per day. The C. & C. shaft is now down to the 2150 station, the bottom still in hard blasting rock, and the flow of water strong. Every thing in and about the mine is in good working order, and the work of development is going steadily and vigorously ahead.

The stock of the Eureka Consolidated Company, while showing but little change in the opening price to-day as compared with our last, is nevertheless very unsettled, and has been down to $33½ during the week. The decline in this stock is attributed to the recent publication of the company's annual report, and that, out of a total income of over $5,000,000, stockholders should only have got $1,800,000 in dividends. They think, if it costs $2 to get $3 out of the earth, somebody must be making a big thing out of it.

We append the report, as follows:

RECEIPTS.

From 15,199 tons base bullion, refined	$3,786,112
Other sources	1,452,347
Total	$5,238,458

DISBURSEMENTS.

Mine account	$480,136
Smelting account	809,824
General expense	64,197
Expenses, San Francisco	8,840
Freight and refining	840,593
Interest	4,840
Legal expenses	16,758
Dividends	1,800,000
J. W. Seligman & Co., advances on bullion	681,951
Laidlaw & Co., advances on bullion	485,993
Superintendent's drafts	11,908
Book accounts	5,553
Balance, H. Donnelly, Superintendent	198
Cash on hand October 12th, 1878	27,667
Total	$5,238,459

The ore-bodies in the several levels of the mine are all looking first-rate, and continue their yield with no apparent diminution in the resources. The reduction of ore for the week has been nearly 1600 tons, producing 339 tons of bullion of the same average grade as formerly. The dead work has been continued with good progress, making 136 feet of drifts, etc., during the week in the several levels.

Grand Prize stock shows a decided advance, opening to-day at 8½, against 6⅜ a week ago.

The drift on the 320-foot east level of the mine is within 45 feet of the Argenta line. The ledge continues broken, but the ore is fully as rich as any sulphuret ore in the old stopes, and is gradually improving as the drift approaches the Argenta ground. The main shaft is 488 feet deep.

Gould & Curry shows quite an improvement. The Hamburg Mining Company has secured a lease of the Atlas furnaces, and soon anticipates commencing the smelting of its ores. The ore of this mine looks very well, and carries a heavy percentage of lead. The stock of the Independence Company is fairly maintained, and the mine is looking well at all points and making regular shipments of bullion; 75 tons of ore per day are being extracted. Battery assays average $72.21; average of tailings, $15.06. The ledge in the face of the north lower level is five feet wide; assays, $50. The twenty-stamp mill is doing good work.

Kossuth stock is steady, at 30c. per share. A trustee of this company recently visited the mine, and reports the existence of an ore-body in the upper levels, and that the machinery can be started up at a few hours' notice, and that the mine hereafter will be worked as a legitimate property, and not for the sole purpose of making deals in the stock as heretofore.

Manhattan opens to-day at $3½ per share. This company is making regular bullion shipments. Mexican and Ophir show marked advances. There are no noteworthy changes in the appearance of these mines. The water recently struck in the Ophir mine by the diamond drill has a temperature of 140 degrees, and it is supposed to come from the Hardy or east vein.

The stock of the Navajo Co. is steady at 75c. per

share. The north drift, 250-foot level, of this mine has been extended to the north or Belle Isle line, and an upraise started to connect with the winze that was sunk 30 feet on the 150-foot level. The vein shows well; ledge not large, but ore rich, the 70 and 150-foot level stopes producing the usual supply of good ore.

The Tuscarora *Times-Review* says it has been asked why the stock of the Navajo Company is selling "at such ridiculously low figures," and says that it can not solve the problem. It adds that "the mine was never looking better, the bullion shipments are regular, ranging from $7500 to $8000, and likely to be continued, and developments encouraging."

The stock of the Original Keystone Mining Company is fairly maintained. The company, however, is in financial difficulties, and we note that several of its drafts have been returned, and also that an attachment has been issued against the company, amounting to $2900, claimed to be due for money advanced and supplies furnished. Raymond and Ely opens to-day at $8, against $6½ as quoted a week ago. Recent information from the mine says that the regular output of bullion will be maintained.

The winze south in the Richer mine is down 30 feet below the tunnel level and shows an increased ore streak now 22 inches wide. It is only a small part of the main ore vein, but it is necessary to follow it on account of the ground being hard near the hanging wall. Tunnel timbered 30 feet. This stock has advanced to $2, against $1½ a week ago. Savage is down $2 per share.

The Sierra Nevada mine is being vigorously worked, and all indications are of the most favorable character. This stock at one time during the week touched $200, and opens to-day at from $189 to $192, while its neighbor, Union Consolidated, does not advance in the same proportion, and shows but a slight improvement on the price of a week ago.

Silver King stock opens at $15 per share. The mine is making regular shipments and paying regular dividends, and has paid its way from the start. Fifteen stamps are now running on its ore, and the company has every prospect of a very promising future. The stock of this company is very closely held, and none has yet reached this market to our knowledge.

Tip-top shows quite an advance, opening at $2, against $1¼ last week.

Regarding the McCrackin and Signal mines, the Yuma *Sentinel* says:

"The bottom is temporarily out of Signal and McCrackin. Both mills are closed, and all work is suspended at the mines. The Signal has large quantities of ore, but too base and of too low grade to work at present. The McCrackin has a fair body of good ore, but its affairs are in such wretched condition that there is little hope of early resumption of work. It seems that the mill belongs to White & Allen, who have never given posseesion of it to the company. Just what the manipulators of McCrackin stock are trying to do, is hard to say; but appearances do them no honor. The McCrackin Company has levied another assessment (fifty cents per share), delinquent December 6th. This may afford a crumb of comfort to holders of protested drafts. If the assessment should be pretty generally paid by shareholders, there will be a fair chance that work will be resumed."

The *Commercial Herald* of October 31st says of the market:

"During the past week the mining-share market shows a gradual recession from the high pressure at which it has been carried forward for so long a time, producing a somewhat apathetic feeling among the entire range of dealers, and causing a very smart decline in the aggregate volume of transactions, which was but $3,400,000, against $5,200,000 the previous week in the San Francisco Board alone. Prices generally have a weakening tendency, and the effort to keep them up is not demonstrative to so great a degree as to give renewed and better-assured confidence to the outside stock-dealing world, for it takes very little to produce weakness among the anxious, nervous, and excited comprising this class of operators. The field of the wild-cats does not yet appear to be narrowed, though the sales of the various stocks are becoming more and more intermittent, under the decline of the long-prevailing excitement. This condition of the market brings less information of a glowing character from the various mining sections on the coast; but let a change for the better in prices take place, and immediately this and that locality has good prospects in the immediate future. So, under existing circumstances, matters remain rather quiet in the development line. Sierra Nevada, at lessened figures, has not been selling very freely. Definite reports about the bonanza condition of the lower levels are still delayed. Ophir is nearly cleared of water, and work will soon be resumed below the 2100 level. Consolidated Virginia produces a daily yield of about 182 tons of ore, and the California about 300 tons per day.

Assessments, with dates when delinquent: Phœnix, 50c., November 30th; De Frees, 15c., December 2d; El Tesoro, 25c., November 29th; Original Keystone, 50c., November 29th; Tiger, $1, December 10th.

The New York Hill Mine has declared a dividend of 25c. per share.

The Consolidated Bobtail Gold Mining Company declared a dividend on its capital stock October 30th of 3 per cent.

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☞ **See Announcement, 2d page this issue.**

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